

# AGRICULTURAL ENGINEERING

Published monthly by the American Society of Agricultural Engineers  
Publication Office, Bridgman, Michigan. Editorial and Advertising Departments at  
the Headquarters of the Society, Saint Joseph, Michigan

Subscription price to non-members of the Society, \$3.00 a year, 30 cents a copy; to members of the Society, \$2.00 a year, 20 cents a copy. Postage to countries to which second-class rates are not applicable, \$1.00 additional. Entered as second-class matter, October 8, 1925, at the post office at Bridgman, Michigan, under the Act of August 24, 1912. Additional entry at St. Joseph, Michigan. Acceptance for mailing at the special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized August 11, 1921. The title "Agricultural Engineering" is registered in the U. S. Patent Office.

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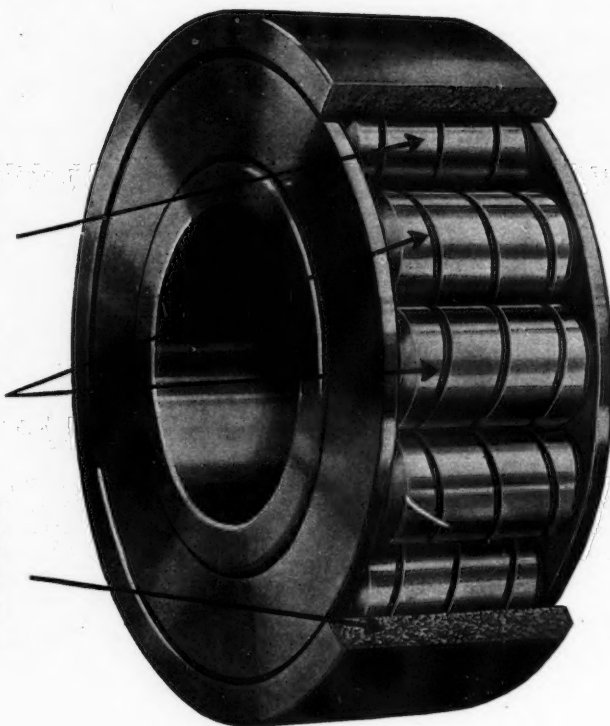
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# AGRICULTURAL ENGINEERING

The Journal of Engineering as Applied to Agriculture

RAYMOND OLNEY, Editor

Vol. 7

APRIL, 1926

No. 4

## EDITORIALS

### Foreword

This issue of AGRICULTURAL ENGINEERING contains the complete proceedings of the National Farm Homes Conference held at Chicago, February 18 and 19, 1926, and sponsored by the Farm Structures Division of the American Society of Agricultural Engineers.

### An Effort for Better Farm Homes

THE discussions at the National Farm Homes Conference indicated the fact that there are many angles to the farm home problem and that a large number of agencies are vitally interested in farm home improvement. The purpose of the conference was accomplished by bringing together interested people from various fields.

It is only through concerted effort that definite results can be shown. The conference gave an insight into the problems, and a vision of the work to be done. We should consider this first conference as a starting point in organized effort for better farm homes.

Farm home improvement is a problem too broad in scope to be solved by any single organization. The American Society of Agricultural Engineers, through existing committees, is working toward a solution of some of the more pressing problems. The committees recommended by the Conference are expected to study other questions relating to home improvement. It is evident that there is an opportunity for every organization to study the farm home problems of most interest to that organization.

Architects, perhaps through their service bureaus, have an opportunity to devote their talent to the plan, arrangement, style and beauty of the rural home. The agricultural engineer, in applying engineering principles to agricultural problems, can assist in the development of permanent, substantial, practical homes, within the limits of economy. Home economics specialists are devoting their energies to the improvement of the home by household management studies, applied art, principles of decoration, and home problems. The extension specialists carry the message to the farm home and render a valuable service.

Agricultural experiment stations may well undertake original research studies to determine the needs of the home from the standpoints of social needs, family life, economical procedure, building development, and management problems.

Commercial agencies, through service departments are in position to exert an influence over the farm home through the distribution of plans, materials, or home utilities. The groups just mentioned suggest the wide range of thought demanded in the study of the farm home.

In planning the future program for improved farm homes, we may well consider a statement by Dr. Louise Stanley at the Conference that "Agriculture is a method of living, as well as a business." The method of living surely demands an amount of attention comparable to farming as a business.

There is no reason why the "method of living" in the country should be less satisfactory than in the city. Certainly there is less restriction in architectural style, design, cost, location and type in the rural home as compared to the house on the city lot. For almost all conveniences, the installation is less complicated and often less expensive than in the city. The major convenience of electrical installation on the farm, either by isolated plants or power lines; is the subject of intensive study.

In brief, the Conference pointed the way to a definite service in the solution of problems that effect the lives of

some forty million citizens. That all groups will accept the responsibility, and devote the necessary effort to bring about a real farm home improvement, seems to be assured.

DEANE G. CARTER

Chairman, Farm Structures Division  
American Society of Agricultural Engineers

### The Agricultural Engineer and the Farm Home

ROOTED deep in every normal human being is the desire to improve the home. Frequently all effort to improve is dormant because the individual does not know where to begin or what step to take. Others who are only too anxious to make satisfaction-giving improvements are unable to do so for financial reasons, not realizing how inexpensive many conveniences and improvements are.

Individual improvement is constantly taking place, but we see today more or less of a concerted or organized effort, not to "help" the farmer improve his home but to collect and disseminate such information that the farmer can make his own improvements.

Both as a business and a method of living, farming has been served by agricultural engineers in their successful efforts to apply engineering principles to agriculture. Farm structures form one of the most important divisions of agricultural engineering. The American Society of Agricultural Engineers recognizes this through its divisional and committee organization. The Farm Structures Division has given a great deal of attention to building design, ventilation, sanitation, home equipment, fire prevention and other phases of this important phase of agricultural engineering.

Individual members of the Society are associated with the agricultural engineering departments of the state colleges, with the agricultural engineering division of the U. S. Department of Agriculture, with the various manufacturing institutions, and with the editorial staffs of farm papers. In all these positions the agricultural engineer is stressing the importance of the farm home and emphasizing the ways and means of making improvements.

The agricultural engineering departments of the state colleges and universities are teaching courses in farm buildings and farm home conveniences to agricultural and engineering students. They are also being requested by the home economics departments to teach their students similar courses. It has been found by experience that the agricultural engineer can teach such courses to home economics students in a way which is practicable and helpful. Not only is this educational effort taking place on the campus, but through the extension division the agricultural engineers are carrying a story direct to the men and women on the farm. One institution has recently toured a part of the state with a truck loaded with water supply equipment. Another institution is holding sewing machine schools. Many are emphasizing electricity on the farm. Almost all of the agricultural engineering departments are able to furnish plans of farm homes to people requesting them.

The agricultural engineer holds an important key position with respect to the better farm homes movement. It is one of great responsibility. The National Farm Homes Conference emphasized this responsibility, for it seems necessary for the agricultural engineer to so outline this educational effort that the relationship between agricultural engineers and other agencies interested in the same undertaking will be correlated and coordinated in order that maximum results can be achieved.

F. A. WIRT

President, American Society of Agricultural Engineers



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**Owen D. Young**

Chairman of the Board, General Electric Company, New  
York

## Report of Resolutions Committee to The National Farm Homes Conference

**T**HE Committee on Resolutions of the National Farm Homes Conference makes the following recommendations:

I. That the following committees be appointed and that the chairman for each be named by the chairman of the Farm Structures Division of the American Society of Agricultural Engineers:

- (a) Committee on Design of Farm Homes
- (b) Committee on Remodeling of Farm Homes
- (c) Committee on Fire Prevention and Protection
- (d) Committee on Farm Home Utilities
- (e) Committee on Furnishings and Decoration
- (f) Committee on Design of Farm Home Grounds
- (g) Committee on Financing the Building of Farm Homes

It is suggested that among others the Committee on the Building and Financing of Farm Homes include the following:

- (1) One or more rural bankers who have met the problem of financing such a plan
- (2) One or more representatives from such farm organizations as Grange, Farm Bureau, etc.

It is further suggested in this connection that this committee give immediate consideration to the acts now before Congress which provide for more adequate financing of farm homes, in order to determine which of them shall be supported.

II. That the chairman of each of the foregoing committees thoughtfully select a working committee made up of representatives of different organizations in order that a unified and combined point of view be secured.

It is further recommended that a working program of farm home improvement be developed as soon as possible which will be sent to:

- (a) The presidents and deans of agriculture of land-grant colleges so that more adequate support will be given to both research and extension programs which will help to promote the program of the National Farm Homes Conference
- (b) The Secretaries of Agriculture and Commerce in order to call their attention to the importance at the present time of such a study so that adequate support will be given to the government bureaus studying these problems
- (c) All commercial organizations interested in the problems of the farm home
- (d) Farm journals and periodicals

III. That, since the continuation of the better farm homes movement depends largely upon a general educational program, the American Society of Agricultural Engineers lend its support and cooperation to the following:

- (a) The American Home Congress which will be held in Des Moines in November, 1926, and which is sponsored by the General Federation of Women's Clubs
- (b) The Better Homes in America Demonstration which will be held throughout the United States the week of April 25, urging wherever possible that more rural homes demonstrations be made a part of this plan.

IV. That an expression of appreciation be extended on behalf of this Conference to

- (a) All speakers contributing to the Conference
- (b) The Chicago Association of Commerce, particularly to Mr. B. F. Heide, for the courtesies extended to the Conference
- (c) The Sears-Roebuck Agricultural Foundation for putting on the air the program of the Conference through Radio Station WLS

V. Because it has been reported to the Resolutions Committee that Secretary of Commerce Herbert Hoover anticipates calling a conference on the elimination of waste and because it seemed important to give consideration at that conference

to the waste represented by farm home fires, the Resolutions Committee presents the following resolution:

WHEREAS, the Committee on Fire Prevention and Protection of the Farm Structures Division of the American Society of Agricultural Engineers reports tremendous fire losses on the farm which can be quite largely eliminated, and

WHEREAS, the most recent report of the National Board of Fire Underwriters states that the annual American fire loss reached the astonishing total of \$549,062,124 in 1924, approximately \$50,000,000 of which is farm loss, and

WHEREAS, a large portion of this loss occurs in dwelling houses and particularly in farm homes, where means of prevention and protection are less adequate than elsewhere, and

WHEREAS, this annual loss constitutes a national economic waste of sufficient importance to deserve consideration in the national campaign for elimination of waste now being conducted under the direction of the Secretary of Commerce of the United States, which it is understood is to include the waste by fire now, therefore, be it

RESOLVED that the National Farm Homes Conference called by the American Society of Agricultural Engineers in Chicago, February 18 and 19, 1926, appeals to the Honorable Herbert Hoover, Secretary of Commerce, to call a national conference on elimination of fire waste which shall consider, among other things, this problem as it pertains to the construction and maintenance of farm homes, and be it further

RESOLVED that the National Farm Homes Conference pledged its cooperation toward the successful holding of such a conference and the carrying out of such measures for elimination of fire waste in farm homes as may be instituted.

Respectively submitted,

**William Draper Brinckloe**, Chairman

Architect, Easton, Maryland

**Eloise Davison**, Secretary

Division of Home Economics, Iowa State College, Ames

**Grace Viall Gray**

Vice-President, Chicago Housewives League, Chicago

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Long-Bell Lumber Co., Kansas City

# The Purpose of The Conference\*

By Deane G. Carter

Mem. A.S.A.E. Chairman, Farm Structures Division, American Society of Agricultural Engineers.  
Professor of Agricultural Engineering, University of Arkansas

IT IS a privilege to extend a welcome to those who have responded to this first call to a conference having as its aim the improvement of the farm home.

The American Society of Agricultural Engineers, in calling this National Farm Homes Conference, has invited some sixty organizations directly interested in the problems of the farm home. The Society has, for almost nineteen years, devoted its efforts, as a professional organization, to the development of farm structures, along with its activities in the other major fields of farm power and machinery, reclamation, rural electrification, and college work.

Farm structures represent about one-seventh of all farm investment. Building plans, equipment, design, materials, uses, convenience, and economy have been given attention. Improvement in modern barns, storage buildings, hog and poultry houses, silos, and other buildings during the past fifteen to twenty years is due in a large measure to the combined efforts of the experiment stations, farmers, manufacturers, trade and public service organizations.

Outstanding in importance among farm buildings is the home. But the farm house is not alone a building; it is the home for the farm family and the social and business center of the farm. The farm home is usually the most expensive building in the farmstead group. It should occupy the most important position. The house has a greater influence on the comfort, health, and living conditions than any other building.

One-third of our entire population lives in farm homes. The farm woman spends most of her time in the house. According to studies at the Missouri experiment station, the work day of the farm woman is sixteen hours long from morning to night, more than twelve hours of which are spent in actual duties.

We might reasonably expect the farm home to be one of our best designed and best equipped buildings. Although much excellent work has been done, it is evident to the casual observer that the farm home has not received the attention it deserves. Nor has the farm home had the benefit of as much study as the urban home.

Twenty years ago in the preface to a government bulletin appears the following statement: "The failure to employ modern methods of lightening labor inside the house is a great hardship on many farms. Thoughtfully planned, conveniently arranged, and carefully constructed buildings are as essential in the country as in the city."

Ten years ago, in a publication of the U.S. Public Health Service, a report is made of the condition on 50,000 farms, in fifteen widely separated counties. It was found that only 1.2 per cent of the homes had a modern sewage disposal system; on 68 per cent of the farms the water supply was potentially unsafe; two-thirds of the homes were unscreened or insufficiently screened. On more than 10 per cent of the farms no attention whatever was given to the disposal of wastes; and more than 90 per cent of the disposal methods were characterized as grossly unsanitary.

Today it is generally conceded that only one farm home in ten is modernized. In the State of Illinois, a survey recently made shows that only about 5 per cent of the farm homes are equipped with modern sewage disposal, less than one-half having running water even in the kitchen, and about one-quarter have furnace heat.

We do not know how many farm homes have been carefully planned. One architect has said that "many plans are attractive but impractical, some are practical but unattractive; the farm woman knows what she wants but we have not asked her about it."

These statements indicate that there are many phases to this larger problem of the improved farm home. Among the phases and perhaps the primary importance is the question

of the needs of the farm home. The General Federation of Women's Clubs is making a nationwide survey of home conditions, including a study of the rural home. In addition we need research studies and a full analysis of the requirements and purposes of the farm home.

Labor-saving mechanical devices, or farm home utilities, are necessary in the interest of efficiency, comfort, and sanitation. Modern developments make it unnecessary for the farm home to be less fully equipped than the urban home. Yet we have the problems of finance, adaptation, and education to contend with in connection with water supply, farm plumbing, heating, lighting, and power appliances.

We need a building code that will give the minimum requirements for good construction to serve as a guide to the farmer, the rural builder, and the agricultural leader, in order that they may have reliable information upon which to base recommendations.

• More attention to fire protection is desirable. According to the fire underwriters fire attacks six hundred eighteen homes every day. We need to know more about fire safe construction, fire protection, and fire prevention.

There are other problems of architecture, design, construction, and arrangement that cannot be solved satisfactorily except by a concerted effort of all available talent.

Of equal importance to other problems is that of financing. Unless some feasible plan is available, or devised, efforts at improvement would be fruitless. Although agriculture is capitalized at some seventy-seven billions of dollars, the methods of financing home improvement represent a live problem.

This conference has been called because we believe that the improvement of the farm home is one of the most vital needs at the present time.

The cooperative effort among organizations interested in farm equipment is responsible for the recent development of a nationwide study of research and improvement in the field of farm-operating equipment.

Cooperation of those groups interested in the application of electricity to agriculture has, within three years, brought about an earnest, definite program looking toward the solution of the problems incident to rural electrification.

The problem of the farm home ranks with farm equipment and electricity in importance, and in the need for intelligent effort. All agencies interested in the farm home have been asked to join in this effort. It is only from a study of the needs, an exchange of ideas, and a broadened viewpoint that we can expect to formulate a program for better farm homes.

Today there are, participating in this conference, the farm woman, the home specialist, the architect, engineer, manufacturer, and the public service organization. From this representative group I am confident that we may well expect to make definite progress toward our goal of improved farm homes.

May I emphasize the point that this conference is not intended to supplant in any way the splendid work being carried on by any other organization. Rather, we hope that our exchange of ideas may serve as an inspiration to all groups to devote even greater attention to the farm home, in fact, I should like to see this conference endorse the work of the General Federation of Women's Clubs, the better homes movement, the work of the government departments, and the public service associations.

Should we accomplish no more than to direct attention to the needs of the farm home we shall feel that the conference has been worthwhile.

In conclusion, the aim of the conference is the improvement of the farm home. Our objects are to obtain a broad view of the subject and the problems of the farm home; to exchange ideas; to learn from the specialists who will tell of their findings; and, finally, to formulate a program looking toward a concerted effort for better farm homes.

\*An address before the National Farm Homes Conference, sponsored by the American Society of Agricultural Engineers, Chicago, February 18 and 19, 1926.

# An Analysis of Farm Home Needs\*

By William Draper Brinckloe

Mem. A.S.A.E. Architect

**H**OW do you business men and women carry on your business? Do you go on guesswork or on facts? That sounds like an utterly absurd question, of course, yet some very good business men are doing a whole lot of guessing about farmhouses.

Take my own case. Some years ago I was supplying farmhouse designs (that is what I called them) to a farm publication. But somehow the readers were not much interested in my pretty little sketches and I couldn't understand it. Surely an architect knew how to plan a house. What was the trouble?

Then came a letter from a farmer's wife, picking my plans to pieces and telling me how they should have been arranged. She told me what she wanted, and why she wanted it. This letter showed me plainly that I had been doing a very great deal of guessing about farm houses, and that I had been guessing wrong.

So after a conference with the editor, I went off for a three-weeks trip, visiting college professors, sales managers, and all sorts of specialists in farmhouse design and equipment. The net result of my trip was a whole lot of guesses and theories as to what farm folk ought to want.

So the editor and I decided to drop guesswork and go after facts. Under the guise of a "farmhouse planning contest," we arranged a nationwide questionnaire, offering prizes sufficient to make it interesting. We asked our readers to send us rough sketch plans of the farm houses they would like to have. "We want your help in planning better homes for the farm families of America," we said. "Forget that this is a contest; imagine that you are planning a farm house for your own family. You may take ideas from plan books, from neighbors' homes, or from any other sources, just as you would do if you were really going to build a new home. Say what building materials you prefer and what labor-saving devices and equipment you would want. Finally, tell us why you like that particular plan. There is only one condition; none but real 'dirt' farmers may enter this contest."

Bushels of plans and letters poured in; the farm women

fairly jumped at the chance of telling us what they wanted and why they wanted it. Tremendously interesting and significant were these ill-drawn, misspelled missives; they upset most of my theories but gave me broad foundations of new, solid facts on which to plan my farm houses.

Since then I have conducted similar contests for various other periodicals. The most recent one was for "The Country Gentleman;" in this contest there were 3600 contestants distributed fairly evenly over the entire country.

As in previous contests, we divided the United States into geographical districts: Eastern, southern, central, north-western, and western. All the facts and preferences were very carefully tabulated by districts, and then combined into grand totals for the entire country.

Some funny things happened. "This is entirely my own idea, I've spent years in working it out," proudly wrote one woman. As a matter of fact she had carefully copied a plan and description from a recent article of my own published under a pen-name. Another woman sent in a circular house, with rooms sliced out like pieces of pie.

But at least ninety per cent of the plans were perfectly practical and the letters clear and logical. A pathetic note of thankfulness ran through these, thankfulness that at last someone was trying to find out what sort of homes farm women really wanted. "Odd as it may seem, a town or village house is not at all what is wanted on the farm," wrote one woman. "Yet hardly any editor or plan book publisher seems to realize this. So when we built our home, we had to draw our own plans because we could not find anything suitable." Hundreds of others said the same thing. However, many women evidently did succeed in finding what they wanted for quite a number of standard plan book layouts, more or less modified, were sent in. Many of these represented actual homes recently built or soon to be built.

It may surprise you to know that the two-story house beat the one-story bungalow by a very narrow margin—55 per cent against 45 per cent, and nearly all the two-story houses had at least one bedroom on the first floor.

The big farmhouse of yesteryear is not wanted today. 23 per cent of the plans had five rooms (not including baths or washrooms); 26 per cent had six rooms; 20 per cent had



As one of the results of the National Farm Homes Conference the replacing of the old commonplace inconvenient type of farmhouse with something very much better will be encouraged. For instance, the picture shows a home on a Maryland farm, of Spanish-American design, which strikes a new note in farmhouse architecture. It was remodeled from two dilapidated old barns, and belongs to William Draper Brinckloe (Mem. A.S.A.E.) and is located on the Peachblossom River in Talbot County, Maryland



7 rooms; and only 17 per cent showed 8 rooms. The other 14 per cent were larger or smaller, with a slight preference for four rooms.

We asked the contestants to tell what materials they preferred and three thousand did this. It was a little difficult sometimes to know just what was meant; for instance, "stucco" might mean either frame or tile base. Quite a number mentioned hollow tile but said nothing about stucco. However, following are the preferences:

Wood or shingle siding .....	50 per cent
Stucco .....	24 per cent
Brick .....	15 per cent
Hollow Tile .....	10 per cent
Concrete Block .....	1 per cent

Exactly 50 per cent of the contestants showed one or more fireplaces on their plans; 40 per cent wanted hardwood floors, giving as a reason that these floors save so much labor. Twenty-six per cent mentioned electricity as a very necessary feature. Hot air heat was exactly twice as popular as steam or hot water; this may have been a matter of cost to some extent.

Now we come to very vital matters—the rooms and features which differentiate the farmhouse from any other sort of home. The little washroom comes first, a place where the men may wash up and leave muddy boots, malodorous overcoats, etc. Thirty-five per cent of the plans showed such a room. The position of this room is tremendously important; I received hundreds of letters like the following:

".....My washroom is so set that the men can enter directly from outdoors and then go to any part of the house without passing through the kitchen. It gets on a woman's nerves to have a lot of men traipsing through the kitchen when she's all fussed up hurrying to serve a meal."

The days of the huge old kitchen are over, about 12 by 14 feet is the favorite size. Tremendous stress was laid on reserving the kitchen for cooking and eating, all other farm activities were rigidly excluded. The screened porch, enclosed in glass, provides a place for many activities such as separating, canning, washing milk-cans, dressing poultry, preparing vegetables, etc.

".....I want room for an oil stove as well as a wood range in my kitchen," writes one woman. "Most architects seem to forget that we do not have gas in the country." There were hundreds of similar letters.

There was a very great demand for a kitchen facing the road. Here is a typical letter: ".....I want some windows over my sink looking toward the road. It's a great comfort to a lonely woman to see some passers-by; she can think about them instead of brooding over her little troubles and worries."

Twenty per cent of the plans had breakfast nooks in or near the kitchen. This proves how quickly farm women seize a new idea.

Twenty-five per cent of the plans showed pantries; the other 75 per cent showed sufficient storage cupboards in the kitchen. The idea seemed to be that a pantry meant many more steps for the housewife.

Usually the laundry was in the basement but sometimes it was on the first floor. ".....I wouldn't have a basement laundry unless I were twins," ran one letter. "Then one of me could stay upstairs to tend the baby and the cooking, answer the telephone, and so on; while my other self was down cellar." Fourteen per cent of the women agreed with her by providing first-floor laundries, sometimes combined with the washrooms.

Nearly all the plans showed both dining room and living room, usually separated by a colonnade or French doors so the two rooms might be thrown together for threshing dinners. The dining room, in many cases, was used as a sort of family living room, whereas the living room represented to some extent the old-fashioned parlor. "City folk make fun of us for wanting a company room," wrote one farmer's wife. "But a city woman doesn't have several men coming from the fields or the barnyard into her living room two or three times a day and messing up everything with mud, dust, chaff, manure, fertilizer, and so forth. I want at least one place where I can take my guests and not feel ashamed."

Very few of the houses had front halls. The women ex-

plained in their letters that such a hall was "just one more place to keep clean." The front door usually opened directly into the living room. The well-known fact that nearly everyone goes to the kitchen door on a farm makes the front door far less important than in a town house.

The old jest about the farmer's ignorance of baths is utterly pointless nowadays. Less than two per cent of the plans failed to show a bathroom. But this bathroom was nearly always on the first floor, close to the kitchen. Very excellent reasons were given for this, some of which were that the great majority of farmers cannot afford to install running water. They may or may not put a little suction pump in the bathroom connected to the well; but, in any event, hot water must be carried from the kitchen stove. Thus the bath must be near the kitchen. A regular water closet is, of course, out of the question under such conditions; a chemical toilet is very frequently used, but this is impractical in a second-floor bathroom.

And right here let me ask the attention of the plumbing-fixture manufacturers. If the present trade agreements were changed to permit country hardware stores to sell low-priced bathtubs, thousand of farmers would equip bathrooms in the manner just mentioned. This would eventually lead to a great deal of new business for the local plumbers; sooner or later the farmer would want a regular water system with complete piping. At any rate, here is a tremendous potential demand for bathrooms. The business men will be serving themselves and serving the farmers if they will work out practical methods of filling this demand.

I have evidence of many other demands, both potential and actual, most of them, I believe, quite unsuspected by manufacturers.

The majority of the plans had the stairway at the back of the house usually with what is known as a "grade entrance." We must remember that all farm activities are reached from the rear of the home; whereas all town activities are reached from the front. This point is very often overlooked by designers and builders of farmhouses.

Twenty-six per cent of the plans had sleeping porches, just about the same percentage as in a town house contest which I conducted for "The Ladies Home Journal." Who says farm women are not as progressive as their city sisters?

The farm men are progressive, too; 14 per cent of them asked their wives to put offices on the contest plans. Perhaps there would have been more offices if more men had entered the contest.

The sunroom, so often seen in plan books, was not popular; only 9 per cent wanted it. But 17 per cent demanded a sewing room, usually quite close to the kitchen so that Mrs. Farmer could keep in touch with her cooking while she sewed. A separate sewing room (not a mere open alcove) was wanted, where her work might be safely left all spread out from day to day. Thus she could utilize all her spare time.

Now let us see what sort of farmhouse these facts will give us? It may be either a bungalow or a two-story structure. It will have a screened porch, wash room, kitchen, dining room, living room, bath, and from two to four bedrooms. The bath and at least one bedroom must be on the first floor. If cost permits, there may be hardwood floors, breakfast nook, sewing room, sleeping porch, office, and first-floor laundry. There will certainly be fireplaces; probably a hot-air furnace, and electricity.

There is one other vital need, which was sometimes referred to in the contest letters—fire safety. This is a pet hobby of mine, probably because I am president of my home town fire company which has two special engines just for rural fire-service. As a fireman and an architect, I know that farmhouse chimneys are built in a frightfully dangerous way; these chimneys cause about 90 per cent of our local farmhouse fires. Fire-safe chimneys are much more important than fireproof roofs. Likewise, I know that more than 50 per cent of the fires to which our company responds are extinguished by chemicals or other simple means; yet not one farmhouse in a thousand has even the most rudimentary fire-fighting equipment. If the underwriters will take the matter up and give some small credit for properly built chimneys and simple fire equipment, I know that we can cut many millions from our farmhouse fire loss.

So much for the major facts brought out by this contest. But before accepting them at their face value we must remember that each contestant was asked to plan the home she would like to have. Possibly she would like to have a six-room house but the house she could actually afford to build might be only a four-room affair. The contest undoubtedly gave a splendid cross-section of the ideals of Mr. and Mrs. Farmer; but realities are often pitifully far below ideals.

Before any general starts his campaign against an enemy he organizes his intelligence department and orders it to get all facts possible. Army regulations provide that when these facts are gathered he must make a written "estimate of the situation;" then, and not until then, does he issue his orders. We are today enlisting in the army which is to fight for the farmer's home. But, first of all, let us organize our intelligence department; let us gather the facts and make our "estimate of the situation." Then, and not until then, let us go forth to battle.

### Discussion

**MR. TURNER:** I would like to ask Mr. Brinckloe if it is possible that one of the main causes of the lack of bathrooms is not due to the cost of the installation, if the cost of plumbing might not be a bigger factor than cost of the bathtub itself?

**MR. BRINCKLOE:** The cost of installation is a very big factor. It is not merely the cost of the plumber's work, but it is the cost of the water system and everything that goes with it. There was undoubtedly a very strong feeling that the farm bathroom must be at the beginning nothing but a bathtub. In other words, there would be no water system except possibly the pump. Undoubtedly the average farmer's wife, who sent in plans, could not possibly afford the expense of a complete bathroom at the time she was writing the letter. Therefore, I feel sure that what these farm women meant was that some simpler form of bathroom equipment must be devised that would cost a great deal less. I think the first cost of the tub, of course, has something to do with it, but the tub might cost \$50 and after you get through putting in the piping, etc., you have the cost running up to \$500 or \$600. If you put in the bathtub, a drain pipe, and a little force pump, and the farmer does the work himself, your additional cost beyond the cost of the bathtub might be \$25, and I think that was brought out conclusively.

**MR. SJOGREN:** I would like to ask Mr. Brinckloe if in his investigation he got any clue as how to handle the fuel in the kitchen?

**MR. BRINCKLOE:** Yes. Very frequently they had some form of wood box that would be open from kitchen, but would be filled from either the cellar, the cellar stairs, or outside the house.

They also laid stress on the dumb waiter. I said nothing about that in my paper, but there was a great demand for

dumb waiters in the farmhouse, running from the kitchen to the basement. One purpose of those dumb waiters was to serve as a sort of iceless refrigerator. They put the food in them, drop them down in the cellar between meals, and then pull them up again at meal time. But another purpose, nearly as important, was that it could be used in raising wood, coal, or whatever might be desired, from the cellar to the kitchen.

**MRS. SANDERS:** I noted particularly that there was no reference to beauty in the home or around the home. Stress was laid on equipment and practical arrangement, but farmers need beauty in their lives. The children need that environment.

**MR. BRINCKLOE:** There was a great deal about beauty in the contest I referred to, both inside and outside the home. A great many farm women referred to their kitchens; they gave color schemes; they wanted blue and white paint, color schemes of curtains at the kitchen windows, flowers that would be over the sink in the kitchen window, color schemes and beauty of other rooms in the house, and beauty of the exterior. They mentioned all those things. Nearly fifty per cent of them said they wanted a beautiful house. Many of them said they did not know how to get it. Some were going to build of cobblestone or stucco, because it was attractive. Some were going to use gray stain shingles. Beauty was very often mentioned. I found I could not condense everything into the time allowed for my paper.

**MRS. SANDERS:** Speaking as the editor of the department of house decoration of "The Delineator," my readers ask me to solve their curtain problems, their furniture problems, their carpets, their wall decoration, their artistic problems, handcraft problems, and it is a tremendous task. I realized from the twenty thousand letters received in my department last year that it is of utmost importance to them to be in touch with the outside world, to be in touch with what is being shown on Fifth Avenue, and in the best department stores; and they are seeking, besides beauty, the latest building suggestions. The departments of home building and house decoration of our publication are very closely allied. Built-in features are of great interest to women. The latest methods of laying linoleum, of permanent floors, cement floors, the latest wallboards, and so forth, and I think that anything that we can give them, either in the papers that are going to be read or the books that are going to be compiled in regard to beauty, permanent beauty or beauty not so permanent, will be of the very greatest interest to all the farm women.

**MR. LOMAN:** I wonder whether the whole problem of better farm homes ought not to be approached from the standpoint of the landscape architect. Our interest is not one of mere decoration, however. I would like to make that clear. We are interested in the general planning of the land for the convenience and pleasure of mankind, therefore, one of the first things we would want to do would be to locate the farm property; then locate the home. So the first thing that would interest us would be the location of the home.

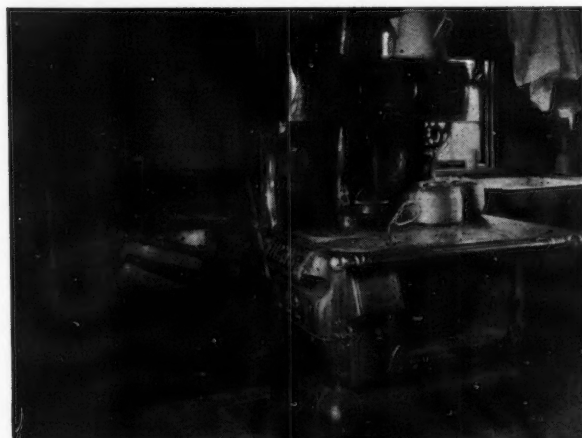
Primarily we are interested in the setting of the home in the broadest interpretation of that term, how the home sits from the standpoint of its relation to advantages that are classed as social, educational, economic, etc.; the relation of the home to the farm group, the other structures; the relation to the rest of the farm, and the relation to the immediate surroundings. That is the location of the home.

Then there is the other interpretation of the idea of setting, and that is the picture of the home, home establishment, and how to arrive at the best possible picture.

**MR. FLETCHER:** I would like to ask Mr. Brinckloe what he has learned about building codes for rural homes in cities. We have codes for plumbing, lighting, and other things that protect society, but the general belief has been that they do not effect farm homes. There is a feeling in many parts of the country that there should be a code for the farm home. How is it being handled?

**MR. BRINCKLOE:** There is no such thing as a farm building code at present as applied to farm homes. There are farm building codes for dairy barns and similar structures which have been evolved by agricultural engineers and also by commercial agencies, but there are practically no building codes for farm homes though there should be. There are a

(Continued on page 143)



One view of a convenient farm kitchen. Note nearness of fuel supply and sink to the range



# What We Farm Women Want Our Homes to Be \*

By Nora B. Dunlap

IT HAS been said: "One of the finest American types is the engineer. The engineer is a man of ideas and ideals. He has brains and sympathies. He is a cool-headed expert dedicated to the ideals of public service."

There is no line of activity that requires so much engineering ability as that of the business of homemaking, so I do appreciate the fact that a group of engineers are asking a farmer's wife to tell what we farm women want our homes to be.

This is a question of vital importance to us farm women and of far-reaching value to the agricultural life of America, and if this group of engineers can aid in solving some of the needs of the farm woman great should be their reward, for upon the solution of this problem will largely depend not only the future life of the farm woman but of America. A declining agriculture will mean a declining civilization; a progressive agriculture will make for a growing satisfactory civilization. The women upon our farms are going to have much to do with our agricultural status in the years to come.

Agriculture and home economics are closely allied in human progress. Agriculture provides the food; home economics uses the food with scientific intelligence that life may be sustained and function in such a way that health and happiness may be the result.

The farm woman of today is not thinking or saying what was good enough for her mother is good enough for her. She is awake to her needs and in forming ideals of what a farm home should be, and she is going to work out these ideals or she will never be content to be a farmer's wife.

A short time ago in Champaign County, Illinois, where we have a home bureau organization, a group of fifty women was brought together to have an all-day meeting to make plans for some constructive work of the organization. As I looked into the faces of these women I was deeply impressed. There were women who had journeyed miles, some over muddy roads, women who had planned their work for a week that they might be able to attend the meeting; women who had been able to bring their husbands to an understanding of what this organization meant to them and those husbands were willing to bring them to the meeting, or else remain at home and take their place during their absence. I had a quickening of the spirit and my heart rebounded with the intelligent glow and the determination disclosed by the words they said and the enthusiasm manifested, revealing many a sacrifice on their parts and ever a willingness to do their part in helping to bring a better attitude of mind and better conditions to the homes of our county. These women, together with the balance of the six hundred members of the organization, will be the leaven that will lift other women up and away from their old-time methods and ways of living.

These farm women are beginning to know what they want their farm homes to be. They are not asking anything unreasonable, but they are asking for a reasonable consideration of their needs.

There are two great needs to be supplied to every individual's life, namely, those arising from the physical side of life and those arising from the spiritual side. The physical demands are shelter, food, and clothing; the spiritual are the things of which are love, confidence, cooperation, consideration, and appreciation of the spirit. No home is a real home unless these requirements can be met with perfect satisfaction and development to all members of the family.

A habitation and a place is first to be considered. The automobile has made most of us better acquainted with farm home conditions, at least from the outside, than we have ever been, and I am sure that most of us have learned to judge the character of the inmates by what the outside reveals to us.

Recently I received a most helpful and attractive booklet

entitled "Old Homes Made New." In a most convincing way it shows how old homes have been made attractive and livable from the outside, and with comparatively little expense. I hope changes on the inside for saving steps have been equally good. I wish this booklet might have a wide distribution among our farm homes for the inspiration it might give our homemakers upon the farm.

I still rebel at much of our present day architecture, although it is an improvement over the old. I think it should be required of every architect before receiving his diploma that he should do house work for at least a month; then his house planning would be more practical and not so theoretical. He certainly would not place the sink as far away from the dining room door as possible or put a butler's pantry between dining room and kitchen, with no butler nor even a maid to take unnecessary steps required by his style of architecture.

Farm women want attractive, conveniently arranged homes, with beauty of line and color; well-arranged shrubbery and perennials add to the completed whole.

I do not believe there is an unattractive farm home but what could gain in attractiveness, if the two responsible for it would cooperate in giving time and effort to its improvement. Many unsightly buildings or conditions on the farm can be improved by proper planting of shrubs or vines. Every desire to be filled is always accompanied with work concentrated and intelligently accomplished.

The equipment of the home holds first place of importance to the average farm woman. A most interesting and important survey of home equipment is being made by the General Federation of Women's Clubs, under the direction of its president, Mrs. John D. Sherman. The project is being made possible by the financial assistance of "The Woman's Home Companion."

Now that women are beginning to find themselves, they are asking of our federal census bureau a recognition of their profession as homemaker or housewife, but so far have received none and are still recorded as having no occupation. Every line of activity but that receives recognition of homemakers. We know exactly how our farms are equipped with labor-saving machines, but not the farm home; so this nationwide survey undertaken by women is going to reveal conditions as they are and the educational work necessary to place home life upon a better plane of thought and action.

The report so far represents the home life of 2,200,000 persons living in 445,987 homes located in 237 communities which range in population from villages of 100 to cities of 100,000.

Statistics usually are not of interest, but I must read a few because they show what some of our homemakers are wanting first in their homes.

Electricity takes first place in modern conveniences, as 87 per cent of the homes reported have electric lights, and the electric iron is to be found in 73 per cent of the homes.

Before toilets are installed or wash basins put into homes, automobiles are purchased and telephones are connected. While only 65 per cent of the homes have inside flush toilets and only 60 per cent have stationary wash basins and only 59 per cent have bathtubs, 70 per cent have automobiles and 68 per cent have telephones.

While 50 per cent of our homes have some sort of musical instrument, only 51 per cent have stationary laundry tubs. The hot water heater, the power washing machine, and the vacuum cleaner are used in from 22 to 32 per cent of our homes, and the power sewing machine in only 5 per cent, but the radio has been installed in 18 per cent of them.

Mrs. Sherman's reaction to the fact that more automobiles and telephones are found than stationary tubs, vacuum cleaners, and more radios than labor-saving machines is that the housewife for generations has sought to escape from the monotony rather than from the drudgery of her lot.

\*Paper before the National Farm Homes Conference, sponsored by the American Society of Agricultural Engineers, Chicago, February 18 and 19, 1926.



When this survey is completed she hopes "to wage an educational campaign which shall teach homemaking women that escape from monotony is not enough. They will get more joy out of their home life by escaping also from the toil which is so unnecessary in this day of inexpensive equipment."

The attitude in too many of our farm homes has been that conveniences and equipment for performance of farm labor must be provided first and the work of the home is only a secondary matter, hence, the drudgery of the farm woman has borne so heavily upon her and thinking the only escape from it was moving to town she has caused many a farmer to abandon farm life and enter a vocation not so desirable as that of farming. The exodus from the farm to the city will never cease until farm men and women as co-partners make a happy home life the first consideration of their lives. And to secure a happy life physical needs must be supplied.

When I was awakened to the fact that better equipment was what I needed in my home, I first started by buying some of the least expensive articles. A dollar's worth of small articles gave to my meal getting and dish washing a new interest. I have studied since that time to take drudgery out of house work, and I feel I have accomplished much in that direction.

An Aladdin's lamp was given me when it was made possible for us to have electricity in our home. Much of the drudgery of house cleaning, wash day, and other work of the home, has been removed. If it were in my power every home would soon be equipped with electrical servants.

We are just beginning to know the possibilities of electricity in helping to build a better home life for America, and we need the combined efforts of producers of electricity, of manufacturers of equipment, and of the consumers to make it possible to have a more general use of it quickly. Such cooperative movements are abroad in the land. And may success attend them.

Owen D. Young, chairman of the board of directors of the General Electric Company, says: "The Delineator's survey of the progress of the mechanization of housework among its readers confirms my belief that the home of the future will be an electrically driven home, not only in the city but in town and country alike.

"The price of this electric power for the home will depend upon the progress of the home and of the electrical industry. That electric current is the only commodity that has gone down in price since 1913 should be an encouragement to the housewife and a happy augury for the future. Although the dollar today does not buy as many groceries or drygoods staples as it formerly did, it buys fifteen times as much electric current as it bought thirty-five years ago. This is because the industry is new and developing.

"The future of the electrical appliance industry depends largely on the housewives of this great country. It is they who will ultimately judge what appliances will be used. The housewife must be interested therefore in this business which can succeed only by meeting her needs.

"She must be open-minded and hungry to find new methods by which she may make her undertaking both more pleasant and more profitable. Pride in the advancement of home and the initiative to advance are essential. The housewives should insist upon the study of home electrification by the home

economics schools and colleges, by their own organizations, and require a constant and unending publicity of the results of such studies through the journals which reach the home. Only by such experimentation can the most efficient use of electric power be learned and the best equipment selected."

Man desires above everything else health and long life. It has been said: "Physical resistance is more precious than gold, more valued than money." If we want energy to accomplish our daily tasks, courage and enthusiasm to carry us through difficult places, initiative to work out our problems, we must have physical resistance, which means "that power alone which develops the body and keeps it in repair." We can have it only by seeking and obeying the laws governing our life as to food, shelter, clothing, and understanding the relation of the spiritual life to the physical. This knowledge will never come through intuition; it can be gained only through the right educational life of our people.

Dr. Thomas Wilson says: "Health is to be gained and preserved by the one method which the present generation does not follow. It is the reward of the simple life, fresh air, plain food, exercise, work, a quiet mind, a soul at peace with itself and with the world, moderation in all things, and the observance of the ordinary principles of hygiene. If you want health for yourself and family there is the prescription for you to follow."

With homes properly arranged and equipped there should be no reason why the drudgery of meal getting should not be greatly reduced, thereby giving more time to the homemaker to study human nutrition and a balanced ration. I believe the average farm woman, if honest with herself and if she understands her responsibility in the matter of giving health-producing food to her family, would want to do it. But if she does succeed with it, as knowledge is gained, she must have the cooperation and assistance of her partner in this homemaking business. Today, because of lack of opportunity, and also desire on her part for the information, most of our farm women are ignorant of these important facts, and that ignorance must be overcome through education. She must also make this knowledge a requirement in the education of her daughters, that future generations may be better fed. When we know the causes of certain conditions and do not remove them, we are truly living false to our obligations as citizens and homemakers.

The farm woman wants, whether she is always able to supply it to herself and family, clothing that is practical and attractive, and such as will meet the needs of the body. In days past we could tell a farm woman from a city woman by the way she was gowned; but today it would be a difficult matter to discriminate between the two. Beauty and appropriateness dwells within the heart of every woman whether urban or rural. These are the physical wants every true farm woman desires for her home.

All these things may be acquired, but it takes more than worldly possession to make a home. The things of the spirit must enter into every detail of the home life, if it is to be a real home.

Homemaking is a partnership affair; no one person can make a home—it takes two to do that. Then between the two forming the partnership there should be a perfect under-



Two views of Rural Home, near Savoy, Illinois, the farm home of Mr. and Mrs. Henry M. Dunlap

standing and cooperation as to the relations that should exist between them in creating a home.

As every home is founded upon the earning and spending of money, a financial adjustment and understanding should be entered into when the partnership is contemplated, and before the wedding ring is adjusted in marriage.

The farm woman of today is asking for a fifty-fifty consideration, and I believe she has only justice back of her asking. Times have changed and woman has entered a new era of existence; she is no longer willing to work just for her board and clothes. She has become emancipated and men must recognize that fact and give her a financial consideration in the home. I find the happiest homes are where a real partnership exists financially.

The home life of America is tottering and one of the causes is that our young people forming homes have acquired such extravagant habits of dress, pleasure, and living, with little understanding and liking for the duties and responsibilities of home life, that to escape their intolerable condition they resort to a divorce or else both become earners that they may have money sufficient to meet their acquired habits of expenditure.

When the finance of the home is adjusted the spirit of cooperation will ever be present. Man's province is to work outside the home and woman's is to work within the home, but it is the province of each to adjust themselves to every condition that arises within the home when they can make it better and assist in adjusting it to the best advantage for all concerned. Sometimes women can aid in financial matters without any injury to the home; and very, very often men can lend a hand in the cares and responsibilities of the home without injuring their dignity or lowering their position in the home or the outside world. Dishwashing is more masculine than feminine according to the Bible; see II Kings 21:13, where the Lord says: "I will wipe Jerusalem even as a man wipeth a dish, wiping it and turning it upside down."

Especially do I feel that perfect cooperation should exist between the father and mother in the training and development of the child. The father of today, more than the mother, is turning the child over to the school and outside influences

for the formation of its ideals and moral, spiritual, and physical life. The home is the only place where the foundation of character and physical life can be made.

The other two great spiritual relations to exist are appreciation and consideration, and these will follow the others as sure as day follows the night, and will bring so many common interests to play upon home relations that a general spirit of loving service will be brought to bear upon all home problems and tasks so that a real home is formed never to be dissolved except by death.

Edward Earle Purinton in his book, "Efficient Living" defines as follows: "A real home is a gymnasium, a light house, a play ground, a work shop, a forum, a secret society, a health resort, a cooperative league, a business concern, a haven of refuge, a path of solitude, and a temple of worship."

If a real home embraces all these requisites then there is a cause back of our nation's lack of real homes for very few of our homes are able to meet these requirements.

What seems so amiss to me in our civilization is that in building an educational system in America we thought woman was the last to be educated, and in the minds of some of our parents and educators we still think so, and that the science and knowledge of homemaking comes intuitively to men and women, but it does not.

As I view human existence at my period of life, I say with emphasis that there is no profession known that requires so varied and exact a knowledge as that of homemaking. It deals with life which is the most valuable possession of every human being.

Serious conditions are facing the future civilization of our nation, and the cause back of them is a lack of the right kind of education both spiritual and physical to meet life's demand.

One divorce in America every four minutes in the twenty-four hours of every day does not portend good for the future. It cannot be a civilization of progress that rests on disrupted homes and a saddened and unnatural child life.

Ill health is prevalent because women are ignorant of food and its relation to life. Crime is increasing and graft and

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## Wanted--- An Evangelist for The Better Farm Homes Movement

By Mrs. Nellie Kedzie Jones

State Leader of Home Economics Extension, University of Wisconsin

I HAVE been greatly interested in attending this meeting to see the splendid men who are turning their attention toward some kind of work for better homes in the rural districts. Mrs. Dunlap gave us a vision in her address of what might be and must be in the homes of this country. It seems to me this matter of hooking up better equipment in the homes for better living is really bearing fruit.

In Wisconsin an experiment is being carried on in one of the rural districts in which a lot of electrical equipment is placed in homes. At our farmers' week recently we brought down one of the women who has had in her home these electrical appliances for some time. She told about the cost of electricity in her home. She stood up before the rest of the women, some nine hundred of them, and said, "I want to say to you that that does not begin to represent the advantage of good appliances in my home." She said the fact that the use of electrical apparatus in the home makes less work in cleaning, makes every member of the household respect himself more and raises the standard of life, because "we are cleaner all the time than we used to be when we burned coal in the kitchen range." She said, "I have not had anything in my home that made me respect myself so much as to feel that I was mechanic enough to run this sort of thing."

There is one thing that I have not heard mentioned here that I hope may be mentioned very soon. We have not yet found a way to make the rural woman or the rural man wake up as they should to the advantages of a better home. Mrs. Dunlap said it was not all the men's fault that we do not have good equipment in more homes. It has been a year

since a college professor in one of the middle west colleges came to me definitely for the purpose of asking if I knew any way in the world by which he could persuade his wife, who is herself a college woman, to have a washing machine. He said, "I am ashamed to have my wife stand there and wash the clothes on an old washboard, but I can't get her to let me buy her a washing machine." He went on to tell that she is an extremely beautiful housekeeper, and she says the washing machines do not wash the clothes clean, and she won't have one in the house, and so on.

There is need, it seems to me, for an evangelist. We are all laymen, and we are all preachers and we do our very best, but I believe if there could be in every state in the Union such an evangelist for the equipment of better homes, as Mrs. Dunlap has been in Illinois, there would be a great advance, and I hope everybody here will go home and hunt for the evangelist and send him or her out and see that there is more real vision held up before the country men and the country women, as to what better homes should be.

We have in our state one young woman who has been talking a great deal about rearrangement of kitchens and she carries a little demonstration with her. We have been much interested to find that the men in the farmers institute are quite as much, and sometimes more, interested in that rearrangement of kitchens than even the women, and the men come and ask questions about it. They will say, "Now, I can make that," or "I can fix that," or "I can move so and so." So it is not a matter of going to the women entirely, by any means. It is a matter for everybody, and I do hope the evangelist will come soon.



# Some Factors In Farm House Planning\*

By K. J. T. Ekblaw

Mem. A.S.A.E. Consulting Agricultural Engineer

EVERYONE likes to plan, and I have yet to find anyone who at some time in their life have not gone through the stage when they felt perfectly able to produce the masterpiece in planning, so far as arrangement of rooms with respect to each other is concerned. Home planning is a pleasant pastime, and I confess to having done a great deal of it myself with great enjoyment. The desire to live in well-planned homes is strong within every one of us; and undoubtedly we all have certain clear, well-defined ideas of what constitutes a plan approaching the ideal in conveniences and comfort.

This is all well and good. Home planning is thoroughly worthwhile, and I would not want to discourage it in the least. However, there are certain practical, as well as aesthetic, considerations which have to be borne in mind when the home is being planned, and their importance is measured only by the ultimate success of the structure as a dwelling place.

Let me emphasize this point regarding planning. It is my firm belief that the services of an architect should be utilized, either directly or indirectly, in the planning and construction of every farm home. I fully realize that many people do not agree with me, but I have seen too many farm homes built with unsatisfactory results, so far as the expenditure of money is concerned, to feel safe in leaving the planning of the home to an inexperienced person. The services of an architect are thoroughly worthwhile from the standpoint of economy. The fee which the architect charges is fully justified, and I firmly believe that wherever a conscientious architect helps in the building of the home he effects economies which much more than counterbalance the cost of his services.

The architect knows how to put artistic effects into both the interior and the exterior of the home; he knows how to combine materials; he knows how to safeguard the owner's interests. Again, I say, the architect's services are thoroughly worthwhile and my best advice to anyone planning to build a new farm home is to enlist the services of a reliable architect.

The architect appreciates cooperation from his clients. I believe the most successful way is to begin planning the home a long while ahead. Interest grows as one gets more deeply into it. Talk with anyone who has built a home, talk with home owners, with materials men, with architects (if you can get them to listen to you), visit new homes that are being built and that have just been completed; find out from the owners whether they are satisfied; study house plans that appear in plan books and in periodicals. Have paper and pencil handy and try your own hand at laying out rooms and combining them into efficient arrangements. Whenever you get what seems to be an exceptionally good idea jot it down on a card and file it.

Then when you are ready to build you have a fund of very valuable ideas and information systematically arranged. You can go to the architect, give him instructions, turn over to him these ideas and information, and let him evolve a plan that seems to suit the requirements. The architect wants your ideas and is glad to submit preliminary sketches until plans that are satisfactory are finally achieved. From this rough plan the architect will proceed to develop refinements which will result in a beautiful, substantial, economical structure.

It is well to remember that the preparation of plans takes time and thought and effort, and one cannot expect to get them for nothing. As a matter of fact, architects who make a specialty of house planning generally do not become rich at it. The architect's fee is usually based upon a percentage

of the cost of the home—5 to 7 or 9 per cent on a few thousand dollars is not a very satisfactory income when it is spread over the several months necessary to complete the construction of the home.

One thing which is often overlooked or underestimated by home builders is the cost of the structure. The optimism of human nature seems to make it impossible to get a house built at a cost within the original estimate. We say we are going to build a \$5000 house or a \$10,000 house; but the chances are ten to one that when the structure is completed it will have cost anywhere from ten to twenty-five per cent more. This is usually a source of disappointment and often of serious difficulty. We have a certain fairly definite plan in mind, and someone tells us that the house can be built from that plan for \$5,000. We want to believe that it can be built at this price so we proceed on that basis. We may perhaps have to stretch our resources in order to accomplish the financing. Then, with actual construction under way, when some unforeseen development occurs, when we wish to incorporate some changes in the plans that involves expense, we have difficulty in providing the funds to undertake it. This is a pitfall which can be avoided if we will only refuse to be stampeded by the joy and exhilaration of actual planning and construction work. The thing to do when we have \$5,000 available for a home is to say that we will build a house that will cost \$4000 or \$4500. We know perfectly well that it will cost more but should we by any marvelous stroke of good fortune be able to keep within our estimate, then we will have a surplus to install additional equipment in the house.

While we are on this subject of costs, it may be well to consider briefly the capital invested in buildings. A tremendous amount of money is invested in farm buildings, something like 16 per cent of the total value of all farm property. It is very easy to invest too much money in buildings, considering the investment from the standpoint of economics, yet we must have shelter; and it is human nature to want nice things. In most of us the desire for quality is inherent. It is hard for us to sacrifice or to economize, to compel ourselves to do with a little less than what we should like to do with. However, we cannot consider farm building construction strictly upon a business basis; we cannot consider the investment in farm buildings as one that must earn a distinct return in actual cash in order to be justifiable. There is a certain sense of pride and satisfaction in the ownership of attractive buildings, in the pleasure and enjoyment of the healthy, wholesome, happy family life which can be made possible only under good conditions and attractive shelter. In other words, the pleasure of living under good surroundings is something very much worthwhile and for which all of us are willing to pay a certain price. These things apply to all farm buildings, but to the farm home particularly. Even so, we must watch our investment so that it does not become excessive, otherwise the burden of payment and maintenance may become so heavy as to destroy all the pleasure which might otherwise come with the ownership of attractive homes.

In building farm homes there are obligations involved which sometimes are entirely lost sight of. Of course, there is the personal obligation, that is, one should build as well as one can afford in order that he may obtain the maximum benefit from his investment. There is also the obligation to the community to build well and to build homes that look well. In connection with this, let me repeat a favorite quotation of mine which was originally uttered by Helen Binkerd Young of Cornell University: "Homes stand not for a month, nor for a year, but for generations. By them the safety of the community is judged, by them the ideals and taste of the community are formed. He who deliberately builds an ugly house admits himself as a poor citizen, while he who builds

\*Paper presented at the National Farm Homes Conference, sponsored by the American Society of Agricultural Engineers, Chicago, February 18 and 19, 1926.



a beautiful house proves himself a good citizen, for his personal comfort contributes to the public welfare."

Speaking of one's personal obligation in home building, let me refer to an advertisement I once saw, entitled "The Invisible Contract." It was, in effect, a reminder to the builder to build well, to see that in this contract with his future he was making the best provision possible against dissatisfaction, discomfort, and expense. It is indeed the most foolish economy in the world to skimp on materials or workmanship in home construction. Far better have a small modest home, substantially built, than to have an apparent mansion with shoddy materials and workmanship.

Here I am reminded of a suggestion contained in a talk recently broadcast by radio in regard to methods of building "to meet the tests of time." Time does subject our homes to the severest of tests, and indeed we cannot build too well.

Much has been said in recent years about permanent building construction for the farm. I have no doubt but that all these remarks have been made in sincerity and faith. There is underlying soundness to them. Our American homes have been built too flimsily. We must build better if we are to serve posterity as we should.

Permanent building construction involves not only the use of permanent materials but the employment of correct practices in combining them. It would be obviously foolish to build a concrete porch unless the floor supports were properly reinforced. It would be foolish to build a masonry house with inadequate footings and foundations under the walls. It is foolish to build an exterior of permanent materials and the interior of combustible materials that may burn and leave only the useless shell.

Much as I should like to see true permanence built into every farm home, we must remember that probably 95 per cent of the farm homes that have been built in the last fifty years and that are likely to be built in the next fifty years will be built of wood which is not considered a permanent material. I do not wish to be understood as expressing myself entirely in favor of wood construction—I simply state the fact that wood is our main building material for farm homes, and we may as well face the fact that it will continue to be the most extensively used building material for years to come. The thing to do is to face this situation, give it the credit it deserves, and use it as intelligently and as advantageously as we can under the circumstances.

The use of wood is accompanied by certain very distinct advantages, among which may be mentioned economy in first

cost. Here again the question of capital enters. It is human nature to desire to get as much as possible for the money expended. One can usually get more room space in the house for the money in wood than in any other material. Wood is also a convenient building material and is available practically everywhere; it is furnished in units of various efficient sizes, in planks, in boards, and in special units, such as shingles. These have all been carefully worked out and standardized from the standpoint of convenient use—artisans have developed who can use these units expertly. Wood is easily convertible; there are more workmen who can build of wood than there are skilled workmen in all other materials put together. There is also the force of tradition behind the use of wood. Our forefathers built their homes of wood so we will build our homes of wood. The idea seems to prevail that the supply of wood is becoming so depleted that in the very near future it will be so expensive that it can be used only for ornamental or special purposes. The facts, however, show this idea to be a wrong one. As an actual matter of fact, it will be many years, several generations, before such a condition develops, if it does develop at all. Improved methods of handling our forests may be developed to such a point that we can in the future readily meet all demands for lumber. When these things are taken into consideration, it should be readily apparent to everyone that wood will for a long time continue to be used in building farm homes, and one of our problems is to develop and recommend means for the most advantageous use of it.

The strength of structural timbers is something with which the average layman is not at all acquainted. Here is a place where the architect and the engineer can be of actual service to the farmer. Certain woods are better for certain purposes than others. It is economy to use the kind of wood which will serve the best. The home builder should not depend on his own knowledge or judgment in this matter; it is a place where ignorance is likely to be very expensive, or perhaps even dangerous.

In connection with the use of wood for home construction, mention should be made of the desirability of the development of practical methods for the preservation of wood. Practically all of the structural timber that is used at present in the construction of homes is used just as it is, with no attempt at preservation. Is this practice justified? Would it not be worth while, from the standpoint of economy, to give these timbers some preservative treatment to increase their life? That is a problem for the engineer to solve.



"The services of an architect," says Mr. Ekblaw, "should be utilized, either directly or indirectly, in the planning and construction of every farm home." It is apparent that an architect had a hand in the design of this beautiful farm home

The exteriors of wood homes, of course, should be painted or stained, but the idea here is not so much to preserve the wood as it is to improve the appearance of the home. The "Save the Surface" campaign which has been conducted by paint manufacturers during the last few years is really an excellent example of what can be done in education in a broad way. Probably nothing has ever done so much to bring people to the realization of the value of material insurance as this campaign.

In order that the greatest benefit may be derived from the use of various kinds of paints, the consumer should have some understanding of the manufacture and constituents of paints. This knowledge is sadly lacking, and just how it is to be transmitted to the user of paints is something of a question. The paint manufacturer does not feel the need of educating the consumer public along this line, because business is generally good, and as a rule people buy paint whether they know very much about it or not. Nevertheless, benefit undoubtedly would result from an educational campaign.

In rural localities much painting is done by the farmer and he acquires by experience considerable knowledge of the best methods of applying paint. However, they should not constitute the only way of acquiring paint knowledge. Our schools and colleges very easily could incorporate in some of their courses information on manufacture and use of paint which would help give the students a valuable fundamental knowledge of this important building material. Paint technology ought not to be a mysterious subject; it is plain economy to know that what is the best kind of paint to use for inside and outside work, on different kinds of surfaces, and for different purposes, etc.

In talking about building materials we often forget that metals play a very important part in the construction of the home and, therefore, are entitled to a great deal of consideration in its planning. Metals simplify construction and make it safe. We owe much of the beauty of modern homes to the various kinds of metals that are used within them.

Sheet metals are used extensively for various purposes in house construction, such as for flashings, gutters, down spouts, deck floors, etc. Galvanized iron is perhaps the most commonly used sheet metal. Regarding this material, it may be said that there is both good and bad galvanized iron. It does seem that the quality of the galvanized iron of today is poorer than that of years ago, but we may be mistaken in this assumption. There is no reason why galvanized iron should not be made in such a manner as to give satisfactory service for a long time; nevertheless, the reverse is more generally true, probably because manufacturers have "skimped" in producing it so that the coating of spelter is not sufficient to give it the necessary protection which insures long life. Even with good quality galvanized iron one must understand its care in order to derive maximum usefulness from it.

Tin plate, or terne, is a sheet metal that is also extensively used. In manufacture it is somewhat similar to galvanized iron, with the exception that the spelter coating is replaced by one of a tin alloy. The remarks which apply to galvanized iron apply in some measure to terne. Both have their place in building construction and the home builder should know how to make the best use of them.

Copper has always been used more or less in the construction of homes, and while it is comparatively expensive in first cost, its great durability renders its ultimate cost extremely low. It seems foolish economy to use less durable metals when copper is available at a reasonable cost. If I might refer to a personal experience, the cost of installing copper gutters and down spouts on my own house three years ago was a little less than twice as much as the total cost of two sets of gutters and down-spouts which were of a less durable material which had been installed during the previous thirteen years. In other words, the installation of copper would have been a decided economy. The extent to which copper is being used is increasing daily, and it is a step in the right direction.

Metals are an important consideration also in the hardware equipment of a building; here is where art and utility can be combined, and the home builder should have some knowledge of the various styles and qualities of building hardware that are available. Too often a small set sum is allowed

for building hardware, with the result that a very inferior grade is used, which results in trouble and dissatisfaction later.

When the idea of permanence comes into our minds in connection with the planning and construction of homes we immediately think of masonry. Masonry construction provides the solution in a great majority of instances where permanent homes are desired. It is a type of construction of great utility and, comparatively speaking, of great economy. Its safety is also an important consideration.

Of the various forms of masonry stone is perhaps the oldest and we believe not the least important. We wonder sometimes why it is that people do not build more buildings of stone, particularly when this material is easily available at very low cost. Stone masonry can be made very beautiful, not only in the rustic rubble, but in the more dignified types of coursed stone. It is a type of construction that is particularly suited to rural construction work, and to rural surroundings, and we would advocate its wider use; in fact, the demand recently for stone structures has been so low that it has hardly paid stone masons to learn their trade. As a result, in many localities they are hard to hire, and it may be that this is the reason for the reluctance to utilize this type of construction in many localities.

Brick masonry is another desirable type of masonry construction which has come down to us through the ages. Brick is a splendid material for farm homes and we should like to see it used to a much greater extent. Its initial expense is, of course, a little higher than for less permanent types of construction, but it is economical nevertheless because it reduces maintenance costs. Artisans who can work in brick are common everywhere and the homes which they build are indeed beautiful. The soft tones of various kinds of face brick harmonizes beautifully with the rural landscape.

It has always been a matter of more or less wonder to me that the teaching of brick masonry is not included in the curriculum of more of the agricultural-engineering departments at our state colleges. Concrete construction is taught in every one of these departments but it is an exception to find practical instruction given in brick masonry. It seems to me that it would be desirable from the standpoint of its ultimate value in home construction to include instruction in brick masonry in our schools.

Hollow clay tile has come into prominence in recent years as a building material and, indeed, it is highly effective for backing and partition walls; as a facing for exterior work, however, it has never been satisfactorily developed and it is questionable whether it ever will. One place where hollow tile does serve admirably is in forming the base for the various stuccos and plasters which are now being used rather extensively not only in rural work but in suburban construction. This subject of stucco is a very large one and it is worthy of careful study by anyone who is planning a farm home. Wonderful effects of color and textures can be obtained by using the right materials; and undoubtedly these advantages will result in a much wider use of stucco in the future.

Concrete as a masonry material is, practically speaking, one of the newer forms, though the history of cement dates back thousands of years. The development of the modern use of cement has come almost within the last century. Concrete is used in building construction in monolithic and unit forms. Many experts have tried to develop a satisfactory method of monolithic construction for houses, but so far apparently without real success. The patent office has hundreds of patented processes in its files. Perhaps the very fact that these processes are patented has been responsible for the limitation in their use. The fact remains that, judging from present developments, the concrete unit type of construction is going to be the most practical and most assuredly is the most popular at the present time. One great advantage of concrete is that, in some form or other, it can be used in the construction of the entire house, from foundation to roof.

Concrete is commonly used in footings and foundations and also in walls, both exterior and partition. It is less commonly used for floors and walls, but there is no reason at all why it should not be generally adopted for both. Concrete roofing materials have been developed, and some of the most beautiful roofs laid at the present time are of concrete shingles of



one form or other. It may be that the house of the future will be a concrete house.

An extremely important point in rural home planning is that of fire protection. Isolated as the farm home is, it cannot depend on organized fire departments for protection. Usually when a farm home starts to burn it is completely consumed. Much of our farm home fire losses can be prevented by simple safety measures, such as keeping fire extinguishers at convenient points, installing modern water supply systems which supply water under pressure, and following certain improved practices in the construction of the home, particularly in those homes that are built of combustible materials. Insurance companies are giving this matter attention at the present time, and when the facts in the matter are brought home with sufficient emphasis rural builders will take the proper steps to give adequate protection to their houses against the danger of fire.

In line with any mention of fire protection, it is worth while to refer also to protection against lightning. Such protection is almost necessary on every farm building on every farm in the lightning belt. Lightning protection as developed by modern experience and practices is practically 100 per cent perfect; and there really is no excuse for a building suffering damage from fire started by lightning. All that is necessary to protect the building is to install an adequate system of lightning conductors in accordance with fire underwriters' rules. The cost is nominal and the results are exceptional.

### Discussion

MR. DICKERSON: I was interested in what Mr. Ekblaw and Mr. Brinckloe both said about fire protection. I would like to know if there are any fire insurance companies that are giving a reduction for fire-resistant roofs on farm buildings. I notice it is done quite generally in city residences, but I should like to know if it is done in connection with country residences.

MR. BRINCKLOE: In my own house, which is out in the country, they give me a little credit for a fire-proof roof. They give me practically no credit for anything else, but they will give you a little credit if you have brick or masonry walls.

MR. UPSON: Mr. Ekblaw's paper represents a valuable contribution to the subject under discussion, and contains just a sort of information which one should have in planning the farm home. There were two or three points in it that are of particular interest to the lumber manufacturing industry which I represent, and upon which I would like to comment briefly.

Mr. Ekblaw referred to the erroneous impression existing in some quarters that the nation's timber supply is practically exhausted, and that therefore it may be difficult to secure good lumber in the future. This impression is certainly erroneous and unfounded. The fact is, and this is based upon definite knowledge of existing conditions, that the supply of good sawed lumber will never be exhausted; that lumber is now readily available from sawmills, better manufactured, graded, and refined, than ever heretofore; and that with improved wood utilization, better methods of taxation, the lessened danger of timber loss by forest fire, and with increased reforestation, there will always be a supply of good lumber, ample for reasonable requirements and at reasonable cost.

In Mr. Ekblaw's discussion of farm home construction, frame construction was placed in the category of "temporary," while construction with masonry and other materials was characterized as "permanent" construction. I do not believe that such a sharp line of demarcation should and rightfully can be drawn between these two general types of construction. As a matter of fact neither is frame construction temporary nor are all forms of masonry construction necessarily permanent. When attention is given in frame construction to such details as the proper installation of chimneys, flues, and fireplaces, the use of improved methods of fire-stopping, and the use of proper wood materials, wood construction cannot be classified as temporary in character.

Mr. Ekblaw commented on the fact that lumber is available in standard sizes and shapes and hence easy to use. Then general public and the home builder should know that

standardization in lumber has been carried even further than Mr. Ekblaw's statement would indicate. Over a year ago the American lumber industry established standards of lumber size, lumber quality, and lumber inspection and grading. All its activities in this direction were sponsored by two departments of the federal government, and the new standards were endorsed by them and by all other interested agencies. The lumber industry almost as a unit is manufacturing and distributing lumber under these standards so that American standard lumber is now available to the consuming public. Lumber users, therefore, can now secure lumber of the kind safest to use and the most suitable in every way for ordinary building construction. And the American Lumber Standards cover structural timbers as well as yard and factory lumber so that engineers and architects can easily determine the grade and size of structural timbers which should be used under given conditions.

MR. BRINCKLOE: What Mr. Ekblaw said about architects naturally interested me greatly, being an architect, but unfortunately it is perfectly hopeless to expect a farmer to pay directly for architectural services. I have been practicing architecture for twenty years and have designed a great many homes for wealthy people and magazines, stock plan services, etc., but for "dirt" farmers I have planned exactly one home. That represents about the proportion that any architect can expect to get. But I fully agree with him that an architect is necessary; however, I think it can be reached through the stock plan and not through the special plan. The stock plan can be sold to the farmer for about \$2 per set of blue prints.

MR. LINN: I would like to follow up what Mr. Upson said about lumber. A house built of wood construction is a warmer house than one built of stucco on tile, or one built of brick. That is not generally known. The heat loss of a house built of brick one foot thick is about 0.24 B.t.u. per square foot per degree difference in temperature inside and out, while the wood wall has a heat loss of about 0.23 B.t.u. If you build a house with a wood wall and fill the air space with a non-combustible material now on the market, you will have a house that is almost fireproof, at least to a decidedly low degree.

MR. MECKEL: I would like to ask what the value and practicability of gypsum is for farm home construction, particularly for partitions.

MR. SIMONS: I don't think this meeting is the proper place for any manufacturer to attempt any propaganda for his particular materials, and please accept what I have to say as merely an answer to the question, and not an attempt to stampede the meeting for gypsum. If one of our engineers were here and had been asked that question, his reply would be that gypsum block probably would be as satisfactory for most partition uses in farm buildings as in skyscrapers, industrial construction, metropolitan residence construction, and so on, but the more practicable and the more easily available form of gypsum structural material for farm construction probably would prove to be a gypsum concrete, which is known as Structolite, which makes it possible to build the bearing walls as well as the non-bearing partitions of the house entirely of the non-combustible material.



This picture presents a familiar sight to those familiar with the countryside. To one possessing a sense of the artistic, this farmstead has possibilities for the architect and the landscape architect



# The Development of Better Farm Homes<sup>\*</sup>

By Dr. Louise Stanley

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THE discussions of this Conference would seem to indicate that we do not feel that the country home is meeting satisfactorily present day conditions. What are the facts upon which such a conclusion might be based? The census reports show a decrease in rural, in favor of urban, population, and this decrease in certain sections is becoming somewhat disturbing. A certain amount of this is essential if agriculture is to provide a livelihood for all those living in rural districts. Doctor Morgan, at the recent conference of southern agricultural workers in Atlanta, told us that only those agricultural regions which are diluted with industry will hold their population. Improved methods of farming mean that fewer people are being needed to carry on the work of the farm, and unless industry filters in providing a means of livelihood, the extra people must move to the cities in order to earn a living. But the present drift is greater than can be accounted for on this basis.

In the second place, we know that the returns from farming are being used to an increasing extent to support urban homes. In some cases the family may live for only a portion of the year in the city, but some of the large western farms have really come to be business enterprises supporting urban homes. This is interesting because it is such a reversal of the picture we used to have, particularly in the South where urban business was used to support the rural home. The man of business took his family out to the country to live because of the advantages and joys of living in the open country.

In the third place, there is the health situation. Various rural studies tend to show that in spite of the abundance of fresh air and sunshine in the country the rural child is not developing on a par physically with the city child. The difficulty, where this is true, lies primarily in the home and the community agencies closely associated with it.

These are the facts: The proportion of rural to urban population is decreasing. The urban home is attracting even those engaged in agriculture. Seemingly the rural child, contrary to the earlier situation, is below the urban child in physical development, and even mentally does not seem to show the same development. This is the most alarming part of the picture for, after all, the most important contribution of the country home to the nation has been the country child.

In any program for the development of the rural home, we need first to find out, if we can, the causes of the present situation. An important factor has been the economic condition of the agricultural industry. Many have left the farms discouraged. Home conditions have been at the root of this discouragement in many cases.

Also, as agriculture has come to be more specialized there has tended to be too complete a separation between the farm and the farm business. Someone said this morning that agriculture is not only a business but a method of living. In the very complete separation which we now have of the farm home and the farm business, that has been forgotten. While the frontier farm was self-supporting, the returns came largely in terms of family living; now we think in terms of a cash crop which has to be exchanged for family living. In the enthusiasm for developing the business, the farmer is like<sup>1</sup>—to lose sight of the end, a satisfying home life, in his interest in the means to that end, farming. There is a tendency "to produce more corn, to feed more pigs, to buy more land," in an endless circle, and in this circle the home for which it is all maintained is lost from sight. This situation has made an economic adjustment in this period of low prices for farm produce more difficult. The spread between what the farmer gets now and has been getting for the last two or three years for his product, and what he must pay for necessities, has been too great. Agricultural economists have told the farmer that the solution for his problem is to

produce a larger amount of what the family needs. That this can be done has been shown by studies made in the Department of Agriculture and in the states. It has been made more difficult by the very complete separation of the farm business from the family living.

Probably second in importance has been the long hours of household work. There is more work to be done, the rural family is larger, the hired help must be fed in many cases, and at times this means much extra work, and in addition, the woman helps with the milk, the chickens, and sometimes with the garden. Fewer conveniences, water in the house, electricity and gas, are lacking in the larger percentage of the country homes. Houses are planned without much thought of the work which must be done in them. Domestic service is not available, even if the price could be paid. Outside agencies to take over some of the home tasks are not accessible. The laundry, the corner bakery, the commercial ice cream maker, are just commencing to reach out to the country home.

In the third place, the absence of community social agencies, which supplement home life, discourage many. Poor schools, absence of church associations, facilities for wholesome recreation, libraries, and health agencies, all these have an important bearing on the development of the rural child, as well as the satisfaction rural life offers to the family as a whole. These can be provided and are being provided in the more forward-looking communities. The conditions under which these can be extended need to be studied.

We have tended to measure the returns from country life in terms of urban standards and ideals, and false values have been attached to these, rather than stressing the real values of country living. The late Secretary Wallace expressed this in the statement, "Too many people assume that urbanization and civilization are the same." That there is a real appreciation of the values of country life by the women themselves was brought out by comments sent in by homemakers contributing to a time study undertaken by the University of Missouri. One housewife said that "though the hours are longer, they are made up for by the greater satisfaction. Besides being more free than the city woman to set her own standard of living, the rural homemaker has another important advantage. In the summer time at least she is out of doors a great deal. We sometimes fail to estimate the value of outdoor life to the health of the individual." An urban housewife reported that she had all labor-saving devices and conveniences but that she was mostly fatigued from "too much indoor life and too many scattered interests." She compared her present situation with the situation in which she lived previously, when she kept house in a sod house with no labor-saving devices. In addition to her housework she gardened, made butter, helped with the milking and other farm chores. Yet, under these conditions, with her simple standards of living, she enjoyed the best of health from out of door life and no hurry or worry.

Practically, the domination of urban standards has made it more difficult for the rural homemaker to obtain house designs and furnishings adapted to her needs. The largest buying power has been concentrated in the city, and urban needs have set the standard for things that are produced. They dominate rural architecture, house plans, equipment and furnishings. Examples of this are seen in every rural community. Not only are the exterior designs planned obviously for urban conditions, but certain requirements such as a side entrance, a washroom for the men, and a laundry on the same level as the kitchen are lacking.

Now what is our program for the development of the rural home? I am putting first, better thought-out farm plans. I think in too many cases we have not thought out the whole farm plan before locating the house. Taking into consideration the fact that agriculture is a method of living as well

<sup>\*</sup>An address before the National Farm Homes Conference, sponsored by the Farm Structures Division of the American Society of Agricultural Engineers, at Chicago, February 18 and 19, 1926.

as a business, a plan that makes the most of the natural beauty and contributes most to the aesthetic as well as the physical development of the family.

In the second place (and that is the job we should turn over to the American Institute of Architects), we want to develop a type of rural architecture which is suited to rural surroundings and needs, not one that is copied from city dwellings but one which expresses the spirit of the open country and takes advantage of its opportunities. This is not going to be one for the country as a whole because our country is too varied to have any one type of architecture to express the spirit of it in all the different sections. These plans should provide for convenience where convenience is most needed, attractive surroundings, and furnish a background for the development of wholesome family life.

Mrs. Dunlap suggested in her address today that she would make a requirement for such architects that they should do one month of housework. I think we might suggest as an alternative that in every architects office there should be a woman who is acquainted with what goes on in the inside of the house and has really participated in homemaking activities, because I think we do need that contribution not only in rural housing but in urban housing. If I may inject a statement here, I might say that, while we have been confining our attention to rural housing, urban housing needs it just as much, and if there is any one type of housing which needs it more than any other, it is the eastern apartment house, where people are having to live in such numbers and in such small units of space.

Attention must be paid to planning for comfort and health, as well as convenience. Sunlight, the prevailing breezes, adequate ventilation, water supply in the house, waste disposal and central heating are all factors which contribute to these. Add to these well-balanced food, simply but tastefully prepared, and you have the foundation for family health.

In the next place we want better labor-saving equipment for the home, and if there is any one place where we need to work together, I think it is here. We need first (and this must be the home economics contribution) to know what equipment is going to help the homemaker most. Time studies will show us this. It will be determined not only by the amount of time and labor saved but also by the amount and cost of available labor. Efficiently arranged kitchens and labor-saving devices are more usual in California, partly as the result of the labor situation, and these have developed slowly in the South where domestic labor has been more abundant. Washing machines are more generally used than dish washers. The greater number and efficiency of the washing machines as compared with the dish washer are factors in this, but the number of small hands in the usual household able to wash and wipe dishes but unable to do the more strenuous job of washing clothes, has probably been a contributing factor.

Comparative studies of different types of equipment must be made by the equipment people themselves, since they cannot be made by government or state institutions. There is nowhere that the housewife, either rural or urban, has been exploited more than in the sale of labor-saving equipment. Better business is going to stop this, and it must come from the equipment people themselves. There are too many designs. There are one hundred different designs of washing machines alone on the market. Experimenting has been done largely at the expense of the housewife, and that is the reason she is paying what she now does for such equipment. It has been costly experimenting. Now is the time for standardizing household equipment. Fewer designs are needed. They should be better, and they can be cheaper with still a fair profit. We need better trained salesmen for these devices, and that too is a question of better business. We need better servicing for them, because they are not going to take the place they should in the home unless they are better serviced, and only a few of the equipment people are recognizing as they should this servicing need and providing for it.

We are going to pay more attention to the beauty of these homes. While this will develop more slowly perhaps than convenience and health factors, it is going to be looked upon as quite as important.

If we are to have farm homes of this type, we need some method of financing which will make them possible. We are going to look more upon the financing of the home as a part of this whole agricultural business. There are at the present time before Congress several different bills which have in mind just this thing, the possibility of financing farm homes over a long period of time, realizing that they are going to contribute to a better and more stable agriculture. All this is a background for a more satisfying home life, as well as a better, more productive agriculture. To complete rural life certain community agencies, such as good rural schools, churches, community centers, libraries, and health facilities, must be added.

In all this we want to keep in mind the greatest contribution that the country home has to make to national life, the rural child. Secretary Wallace, in his book, "Our Debt and Duty to the Farmer," says, "The grain, livestock, fiber crops and vegetables and all other products of the soil—they are all necessary to our well being, but there is another crop which is infinitely more precious, the crop of children. It is this crop which makes the farmers of the future and insures the continuance of our food supply. The surplus of this crop (and he tells in this book just what the surplus is) above the farm needs makes the steady stream of fresh, virile, potent blood which flows into the cities and is such an important contribution to the vital human force of the nation." If we are going to keep up the quality of that supply, it must be through the development of farm homes, and not only keeping up the standard of the farm home to what it has been in the past but seeing that it keeps pace with the developments of the future.

(EDITOR'S NOTE: A reading of Dr. Stanley's paper serves to bring out the close cooperation that should exist between the home economics specialist and the agricultural engineer. In a number of state agricultural colleges we know of, the home economics and the agricultural engineering divisions are working together very closely on problems that involve the application of engineering to the farm home. This is as it should be, and it should be encouraged. Greater efficiency through the more extensive use of labor-saving equipment is just as essential in the home as it is about the farm. Moreover, it would be better for the entire family if relief from farm drudgery was brought about first of all in the home.)



As Dr. Stanley says, "Attention must be paid to planning for comfort and health, as well as for convenience." This house is typical of the better class of farm homes that are being built today



# The Agricultural Engineer and The Farm Home\*

By F. A. Wirt

President, American Society of Agricultural Engineers

ONE of the most important branches of agricultural engineering is farm structures which, of course, starts with the farm home. Farming is a business; it is also a method of living and, as such, the home is the starting point. We can perhaps better understand and appreciate the interest of the agricultural engineer in farm homes if we know something about the national society that represents his profession.

In 1907 the American Society of Agricultural Engineers was organized; originally it was a group of men engaged in the teaching of farm mechanics. Agricultural engineering, as such, was not known at that time, but the small and enthusiastic group of charter members was convinced of the importance of applying engineering principles to agriculture and of the need for a national organization. The society has won widespread recognition for agricultural engineering as a term descriptive of the application of engineering to agriculture and as a profession rendering needed service to the man engaged in farming and the woman living on the farm.

In the application of engineering principles to agriculture we find these broad divisions: (1) Farm power and machinery; (2) rural electrification; (3) reclamation, including drainage, irrigation, soil erosion, land clearing, etc.; and (4) farm structures and farm home conveniences.

All are subjects of the utmost importance, which require a knowledge of agriculture and of engineering. To anyone at all familiar with the agriculture of America simply to mention these four general branches of agricultural engineering is to acknowledge their fundamental importance.

Fortunately for the best interests of agricultural engineering, membership in the American Society of Agricultural Engineers is open to men and women who are interested in agricultural engineering and who wish to do their part in an organized way in making the life and business of farming more profitable, more satisfactory, and more enjoyable.

Teachers, experiment station workers, and extension specialists from colleges, universities, state departments of agriculture, and the U.S. Department of Agriculture make up a large part of the membership. From the manufacturers of farm home conveniences, farm machinery, building materials, electrical equipment, reclamation machinery, much of our membership is recruited. Consulting agricultural engineers, county agricultural agents, Smith-Hughes teachers, and others are to be found on the membership roll. By suitable grades of membership we have extended a welcome to all who are interested in the application of engineering principles to agriculture.

To meet the organization needs of agricultural engineering more satisfactorily, the Society is organized into the following technical divisions: (1) Farm structures (including farm home conveniences); (2) farm power and machinery; (3) Reclamation; (4) rural electric; and (5) college.

The objective of better homes on our farms is worthy of the best efforts of any organization. Better living conditions on the farm we must have. Farm operating equipment has done much for the farmer. Better farm homes and better farm home conveniences will do much for the farmer's family.

In value, farm buildings stand second to land, as shown in the following figures from the 1920 census:

Value of All Farm Property	
Land .....	\$54,829,563,000.....70.4 per cent
Buildings .....	11,486,440,000.....14.7 per cent
Machinery .....	3,594,773,000..... 4.6 per cent
Live Stock .....	8,013,325,000.....10.3 per cent
Total .....	\$77,924,101,000

The costs of producing an acre of corn in Iowa can be

divided, roughly, as follows: Land, 50 per cent; labor, 20 per cent; power, 20 per cent, and miscellaneous, 10 per cent. It will be noticed that the cost of the use of land is very high. This has come about quite largely through the efforts of farmers to buy more land to raise more hogs to buy more land to raise more hogs add infinitum. If the farmers of Iowa had spent their surplus for farm home conveniences and for equipment to make living on the farm easier, more pleasant and more enjoyable, they would have been several hundred per cent better off than they have been the last few years. It might be well to add that, if the bankers of Iowa had suggested the purchase of such conveniences, they could have prevented the mad scramble for land which has raised the price of land to such a point that it cannot by any system of agriculture pay dividends to the multitude of owners.

Mention has been made of farm home conveniences. Let us see what has been done in Illinois. We do not have this data for many of the states, but Illinois is a good example for it is large and prosperous. The following table (1924 statistics) shows the various types of conveniences and the number of farms of the state on which they are found:

## Farm Lighting—

Acetylene .....	10,120
Storage battery .....	18,170
Power lines .....	8,510
Total modern lighting .....	36,800
Sink and pump (kitchen) .....	98,440
Complete plumbing systems .....	13,570
Heating plants .....	54,579
Total farms .....	237,181

The most important building on the farm is the farm home. The agricultural engineers, together with our colleges and manufacturers, have done much to be of service in bringing about better farm homes. The agricultural-engineering departments at the state agricultural colleges, universities, and the U.S. Department of Agriculture have sent out hundreds of building plans. These have been in great demand. But it may surprise you to know that the superiors of some of these men have prevented the agricultural engineers in the past few years from devoting much attention to farm buildings. The reasons given were that the farmers could not and should not put their money into expensive farm buildings. This attitude is justified in part, but it has been responsible for a lack of progress in many directions. These restrictions fortunately have now in large part been removed and we find specialists in farm structures to be exceedingly busy at the present time. In the colleges, the departments of home economics have requested the agricultural engineers to teach the home economics students such courses as farm home conveniences and elementary design of farm homes.

The committees of the Farm Structures Division of the American Society of Agricultural Engineers have been hard at work for several months. They report that now is the right time to emphasize improved farm homes. These several committees include the following: Better Farm Homes, Farm Building Design, Farm Building Code, Farm Building Ventilation, Farm Building Equipment, Farm Sanitation, Farm Storage, Farm Home Utilities, Fire Prevention and Protection.

Agricultural engineers are very close to conditions on the farm. Much of their time is spent in immediate contact with country living conditions. We have seen more than one situation which has pulled hard on the heartstrings. To many members of the Society the question of better farm homes is of exceeding importance, for agricultural engineers in the main have come from the farm, and even if they have not they are so close to these conditions that they know actual farming conditions.

I wish to quote from a letter. The writer is an agricultural

(Continued on page 144)

\*An address before the National Farm Homes Conference, sponsored by the American Society of Agricultural Engineers, Chicago, February 18 and 19, 1926.



# Improving the Farm Home\*

By Ellen Rose Dickey

Home Advisor, Sears-Roebuck Agricultural Foundation

WHEN I think of the average farm home of today and contrast it with the average home of even fifteen or twenty years ago, it seems almost impossible that the magic wand of a few years time, in addition to the ingenuity of men and women, could work such wonders. Of course, there is much yet to be accomplished. We all realize this, but much is being accomplished every day we live—brains, imagination, and intuition (which is often termed our sixth sense), combined with carefully planned farm home management, are really making our farm homes delightfully comfortable.

I am very much for the modern farm as a practical school of life and an ideal environment, especially when I think of the children. I believe a farm home can be made the most attractive home in the world for men and women, fathers and mothers, boys and girls, and babies to live in, and to be supremely happy in, even though the family unit is limited as to ways and means.

The coming of the automobile on the farm has destroyed the old barrier of miles between neighbors, stores, schools, and markets that in former years meant almost complete isolation, especially during the winter. Is it any wonder farm women's spare moments were very likely to be lonely in those days? It is no wonder the city's lure was strong for growing boys and girls.

Let me paint for you a word picture of the old-time farm kitchen. That room, even though the parlor of the old days actually existed in all the glory of its indispensable "what nots" and the modern living rooms of today actually exists with its many modern attractions, was and still is the real living room of the home. It is in the farm kitchen that loving hands still prepare the three feasts a day; it is here that little daughters still learn to make pies and cakes and other goodies like mother makes them; it is here that baby's first steps are taken; it is here in this great room that farm hands gather with the family around the board, and it is here after the last sup of tea in the few leisure moments before bedtime that they talk over the events of the farm day.

Let us recall the old farm kitchen days. Do you remember how Dad and Jim and one of the hired men used to take turns at the old well just outside the door drawing pail after pail of water and bringing it into the kitchen stove where it was heated for the evening dishwashing, and refilling the old reservoir many times for the Saturday night baths? Do you remember how the pans of dirty dishwater had to be thrown far away in summer so the flies would not be bad around the house? Do you remember the old garbage barrels? Do you remember how you used to trim and fill and clean the lamps and polish the big fat lamp chimneys with old newspapers? Do you remember the old cellar, cool in summer, where the crocks of fresh milk were left overnight, where the butter and eggs were kept, where everything in fact that had to be kept cool was put, and do you remember getting ready for the Saturday night drive to town with the load of these same eggs and butter to be exchanged for the groceries and dry goods you needed at the general store? Do you remember the old woodpile and the box around the stove that always seemed to be empty? Do you remember back of the stove the old bucket of corn cobs that, with the addition of a little coal oil, always started the fire crisp winter mornings? Do you remember the old cistern that supplied the folks with soft water on wash days, the same old cistern that little Johnnie almost fell into because of the old rotten boards on top? And last, but not least, do you remember the old cookie jar that stood just around the back of the door in the pantry, the old cookie jar that Grandma and Aunt Sue always kept filled? Fortunately, the cookie jar has descended

through all the years and is still the same best "between meal" friend.

Now what do we see in the modern home by contrast to the old-fashioned farm home? To those of us who have known the modern advantages it is hard to realize how we ever got along without the electricity that provides light and that supplies power for the washing machine, flat iron, motor for mother's sewing machine, the vacuum cleaner that plays magic with the dust and dirt, the friendly table toaster, the fan, curling iron, and I must add the heating pad that replaces the old soapstones and bricks for cold feet.

Even if the farmer has not installed his own electric light and operating plant, there are still many of the modern inventions easily obtainable, and inexpensive too, that save hours and hours of hard and wearisome labor. There are many excellent types of washing machines besides the electric; there are the water and hand power machines that are easy on the clothes and much easier on folks than the old back-breaking scrubbing over the board. There are now to be had very reliable non-electric vacuum cleaners too for about half the price of electrically operated cleaners.

I want particularly to say a few words about the importance of a sink and pump in the kitchen and the comforts of a real bathroom just as soon as ever it can be afforded. It has never seemed economy to me in this day and age to be without a sink and pump in the kitchen, when they can be had for as little as \$15.00. Think of the many steps and the strength and energy saved; yet today one frequently sees even in fairly prosperous farm homes water being carried into the house from a well. That is what I call a case of just plain old habit, and a habit that should be replaced immediately with a reliable kitchen sink and pump.

Mother will appreciate the sink and pump a thousand times a day, and Dad and the boys will appreciate it when they come inside to wash the grime of the day from their hands and faces, and they will all wonder how they ever got along without it. I have known of farm women who have turned plumbers in emergencies and installed their own sinks and pumps after saving up for them out of their own butter and egg money. Almost the very first thing I think in improving the farm home is to see that there is a sink and pump in the kitchen or, better still, regular hot and cold running water connections.

Just a few words about the convenience of a comfortably large, light, and sunny bathroom in a farm home. Very often I have found that no provision for heating the farm bathroom is made, and I believe you will agree with me when I say that a nice warm bath in a cold shivery bathroom can never quite equal the comforts of the old washtub pushed up in front of the kitchen range. If you build in a nice comfortable bathroom be sure to arrange for heating it, even if the heat provided is nothing more than a good oil heater, the kind that can be carried about by a handle. If there is electricity on the farm an electric heater is a very practical investment. It takes but a small space and its heat is strong, steady, and adjustable as to the direction of its rays.

There is nothing quite so satisfactory all around as electrical equipment in the home, and I hope the time is not far distant when the average modern farm home will be equipped so as to take advantage of all or at least a great many of the new labor-saving devices that electricity offers.

Someone has truly said that "whatever lessens woman's work benefits the race." Labor-saving equipment is one big means of lessening woman's work. Careful planning is another. There is no need for eternal drudgery in the farm home.

I want to mention just a few of the most important labor-saving devices beside the electrical appliances I suggested a few moments ago. Much of this labor-saving equipment may be fashioned at home, with the help of Dad and the

\*Paper before the National Farm Homes Conference, sponsored by the American Society of Agricultural Engineers, Chicago, February 18 and 19, 1926.

## Improving the farm home is a tremendously big problem requiring the services of the agricultural engineer, the architect, and the home economics and household engineering specialist.

boys, and finally with mother's own finishing touches, those touches that always lend individuality to a home.

There is the kitchen cabinet which really is just as important to the housekeeper as the bench is to the workman or the laboratory desk to the chemist. With a kitchen cabinet, mother or daughter may sit comfortably with her whole kitchen workshop within easy reach. If you are planning to make the kitchen cabinet at home, good, well-seasoned wood should most certainly be selected, wood that will not warp or swell. If you are purchasing a ready-made kitchen cabinet select the most convenient one you can afford. The white cabinets of the modern day are truly works of art and will bring a great deal of happiness to every housewife.

A fireless cooker is a great boon to the farm housewife. It can easily be made at home out of a tightly built wooden box, an old trunk, or even a small barrel and a good sized kettle (one holding about six quarts), with proper packing and insulating materials. The box should have a good hinged cover with a clamp fastener. There are many free bulletins which may be secured from the various state agricultural colleges and farmers' bulletins from the United States Department of Agriculture at Washington that explain just how to make these time-saving devices. Ready-made fireless cookers with all the latest improvements are now within easy reach of the family purse. Do you know that a fireless cooker is a good place to put bread to rise? The bread is kept at the proper temperature, and protected from drafts. The fireless cooker may also be used as a refrigerator; and for the preparation of dishes that require long, low heat, there is nothing like the fireless cooker.

A tea cart or light-weight tray-table on wheels is another great help to the housewife. It saves endless steps and in addition, is an attractive piece of furniture. It, too, may be made at home at very little cost for material. Mother and daughter may even add the final wood finishings themselves.

And plan to build in a good sized closet for your cleaning utensils if you have not already done so. It is always wise

to have a special place where cleaning utensils may be kept in good condition, as clean as possible and ready for instant use. Time and energy are otherwise wasted in collecting the various utensils that are required for cleaning and dusting. You may prefer to use one end of the back porch for this closet. Put up in such a closet plenty of hooks, shelves and racks for brooms, mops, dust cloths, furniture polish, buckets, the vacuum cleaner, the carpet sweeper, etc. These utensils are unsightly and are best kept behind doors. The ironing board that disappears into a tiny kitchen wall closet is a delight to every housewife.

If you can possibly afford it, and especially if your family is of medium or large size, plan to own a steam pressure cooker. Meals can be prepared in at least one-third of the time it takes you to prepare them by the regular stove fire or stove oven methods. Those of you who have tried the steam pressure cooker will, I am sure, agree with me on this point.

And I hope all housewives have discovered that a floor covered with linoleum is a wonderful time saver. Think of all the weary hours spent scrubbing soft wood floors, when a few moments with one of the new mops and some good soap suds will make the whole room look as neat as a pin. The new artistically figured linoleums are being used not only for kitchens and pantries, but for living rooms and bathrooms as well. They are practical, durable, and sanitary.

Before I leave the kitchen, we will just take a peep into the pantry or store closet. Are your shelves well stocked with staples, such as sugar, flour, spices, tea, coffee, canned pineapple, canned salmon, canned or powdered milk for emergencies? But you know from experience the value of a well-stocked pantry.

I have not said much about the farm home other than the kitchen. Shall I say, in a few words as to these other delightful rooms, that the individuality of the womenfolks in the home reflects itself in the furnishings and color schemes of the entire house? So many ideas about the decoration and tasteful selection of appropriate furniture are being discussed in the various women's publications, that women nowadays, both on the farm and in the cities, are waking up to the fact that it is not so much the necessity of a large outlay of money for refurnishing as it is the careful planning and individual touches that really count.

Just a few words in behalf of that good friend of the whole family—the furnace, whether it be hot air, hot water, or steam. The furnace will give no end of comfort to every member of the family. This is Dad's part in improving the farm home and he knows that in the end a furnace is much less work than tending several stoves and ranges during the cold winter months.

## The Method of Financing the Farm Home An Important Consideration

WHEN we are considering the cost of the farm home, we must not lose sight of the question of financing the building of the new home or the remodeling of the old one. "Frankly," says K. J. T. Ekblaw, consulting agricultural engineer, "I have never seen any sensible logical discussion of a plan that might be generally applicable to the satisfactory financing of farm home construction. There are building and loan associations that aid in the building of homes in towns and cities, and there are various other types of financing organizations that help the city dweller, but if the farmer who wants to put up a new house cannot get his bank to help him, he will find the problem of financing a difficult one, unless he has the cash himself."

The National Farm Homes Conference took an important step, when in the resolutions adopted at the closing session of the Conference it was recommended that a special committee be appointed and charged with the responsibility of seeking a solution of the problem of farm home financing. It happens that this question is already being given attention in bills that are now before Congress.



This is part of the picture Mrs. Dickey paints in the accompanying paper—old-time blue Monday wash day on the farm. The electrically driven modern washing machine is rapidly replacing this method, and incidentally taking the backache out of wash day



One of the purposes of the National Farm Homes Conference, sponsored by the Farm Structures Division of the American Society of Agricultural Engineers and held at Chicago, February 18 and 19, 1926, was to review the activities of various agencies in the direction of developing a better farm homes program. Following are reports presented at the Conference by a few of the leading agencies, which include the Division of Agricultural Engineering of the U. S. Department of Agriculture, U. S. D. A. Bureau of Home Economics, Better Homes in America, Division of Building and Housing of the U. S. Department of Commerce, American Agricultural Editors Association, American Home Economics Association, National Congress of Parents and Teachers, and American Farm Bureau Federation.

## U. S. D. A. Division of Agricultural Engineering Suggests Program for Farm Home Improvement

By M. C. Betts

Mem. A.S.A.E. Architect, Division of Agricultural Engineering, U. S. Department of Agriculture

THE designing of the farm house, exterior and interior, like that of any other real home, is an individual problem and because of the great diversity of family requirements, preferences, financial ability, climatic and other local conditions influencing the design, no one organization can produce a sufficient variety of complete plans to affect materially the situation in farm house design. Standardization has been effected in many things but neither the farm family nor its likes and dislikes are capable of standardization; nor, were it possible, would it be desirable for if there is any place where individuality should be fostered it is in the homes of the nation.

Evidence of the desire of the farmer for information pertaining to all phases of home building lies in the volume of requests received by federal, state and other organizations concerned with that subject. The facilities, as at present constituted, for preparing and disseminating such information are inadequate and incoordinate. Particularly is this true with respect to the availability of suitable farm house plans.

Consideration of the existing conditions leads to the thought that the solution of the farm housing problem lies in a widespread but coordinated program of education for the farm family, the rural carpenter-builder, materials dealers, bankers, merchants and all others concerned in the building and furnishing of farm homes. This educational effort should be along the lines relative advantages and proper use of materials, adapted to local conditions; the availability and economics of the use of conveniences and labor-saving devices; the economics and conveniences to be effected by careful planning; the distinction between good and poor taste; appreciation of form, line, proportion, color; the principles of landscape treatment; household management; financing of the home building.

Having knowledge of the things which go to make a home, the farm family can plan for its own requirements and preferences. Unless it can do this it is no better off than the average city family which is no longer the master of its destiny, so far as housing is concerned. Few city families, of financial standing comparable with that of the farmer with whom we are concerned, can afford the services of experts in the design of house and furnishings, and they must take what they can find in ready-made houses, furnishing them to the best of their ability, or inability.

At the present time the average farmer does not employ expert services, because such services have not been generally available to him and consequently he has not appreciated their use and value. They are not generally available to him because those capable of designing efficient and attractive homes are not familiar with farm requirements and conditions and because the field at present is not sufficiently remunerative to attract them. More is the pity, for the farm site—unrestricted in size and location—so often offers opportunity for effective play of imagination and the real home is nothing

more than the result of trained imagination functioning along well-ordered lines.

Since the farmer is without expert guidance he must, perforce, cut his own cloth. It should be possible to assist him in choosing the cloth, of varied materials for different purposes, and to suggest combinations that would present a pleasing appearance.

A great deal may be accomplished through the preparation and distribution of educational material as outlined above, but progress would be slow indeed if results were dependent upon the efforts of any one organization. It will be necessary to bring about cooperation between many agencies, individuals and organized groups, working along a carefully planned intensive educational program, to prepare material for dissemination. Included in such cooperative effort would be various channels through which the information may be passed on to those in need of it. County agents, home demonstration agents, clubs, farmer organizations, the press, the school room and other agencies would be utilized for this purpose.

In this way it may be that measurable results will be had in a generation or two, but it will require several generations of continued effort to so mold the national inclination for, and ability to create, real homes that the effect will be generally noticeable. More rapid progress will be made in some directions than in others. As a nation, urban as well as rural, the practical, utilitarian things appeal more than do the aesthetic or sentimental; conveniences and labor-saving devices will appeal much more readily than will tasteful colorings, form and arrangement. Both the practical and the artistic are essential to the full development of home life. The introduction of utilitarian improvements will be comparatively easy of accomplishment where the money to pay for them is available. Improvement on the artistic side will be much more difficult because of lack of understanding and appreciation, qualities which, though innate in some individuals, generally may be inculcated only by long training and association. They cannot be administered in capsules or acquired as is a drug store complexion.

Susceptibility to the effect of artistic surroundings, as a national characteristic, can be brought about only through training of young children some of whom will in turn become teachers of the young. In other words, we must include in the instruction given in our schools such of the arts as will awaken or develop an appreciation of the beautiful. The system of teaching employed in many of our educational institutions is being severely criticised on several counts, including the charge that character building and the fostering of initiative and straight thinking are given little or no attention. The very slight, if any, opportunity afforded for the proper rounding out of the growing mind, the more equal balancing of the strictly practical and general culture, is another count in the indictment. It is not necessary that



every child become a painter, sculpter or architect, but only that an effort be made to instill in some of the children the ability to understand and appreciate the aesthetic. It is not an impossibility; it is merely a case of long continued effort on the part of unselfish men and women who are thinking of future generations.

The architectural profession—painters and other artists as well—has been remiss in this connection. It bewails the lack of appreciation on the part of the public yet has done little to foster it. The business man develops a market for his goods, so must the artist and architect. The opportunity lies primarily in our school rooms. If textbooks can be changed each year or so—presumably to better the education of the child—better and broader teaching in the arts surely can be introduced so that the professional artist will have a better market for his wares.

This may seem rather beside the point; it is not. It may be somewhat visionary but woman suffrage was accomplished only by determined prolonged effort. There are other instances of national advancement brought about by insistent effort through long periods of time.

But whatever may be done for future generations we are just now more concerned with the present. We have two classes of farm population to consider—those who have the money to spend and need guidance to do so wisely and efficiently, and those who do not have the money but must have shelter. It cannot be denied that, except in a limited way and in certain directions, any improvement in the farm home will add to the cost. Some of it may be returned in tangible gain; some in a manner less tangible but none the less sure; some in the mere pleasure of living. Those who can pay can be helped; those who cannot must do without. Possibly they may be given such assistance that, through economic advancement, they later will be able to provide better homes. That is a field for the economists, experts in farm management, machinery, crop growing, marketing—the business end of farming.

A program of education has been suggested as a means of assisting the farm family to do its own planning, building and furnishing of the farm home. It seems entirely feasible except for the planning and erection of the actual house structure. Without complete drawings, worked out in detail, costly mistakes easily may be made, nor can the ultimate result be in any measure assured. It is asking too much that the farmer be educated to be his own architect. If he can be imbued with a desire for good architecture and some sense of discrimination, it is all that can be expected. The farmer has a sufficiently difficult job without taking up the profession of architecture. To spoil a good farmer in making a poor architect would be doubly disastrous.

Plans and specifications are tools of the builder just as

much as are hammer and saw. One can build without either, but think of the waste and the ultimate result. It does seem necessary then, if the architecture of our farm homes is to be improved, that some means be found of providing the farmer with proper plans and specifications. As I have said, no one individual or organization can perform the necessary physical work nor provide the knowledge of the arts of design and breadth of imagination that must be brought into play. Cooperation, utilizing all available ways and means, seems to be the only solution.

Although, generally speaking, good taste may be comparatively rare there can be no monopoly of it in the design of houses or furnishings. There are instances of artistic creation, the product of a single mind, which may be considered beyond criticism; that is, they please all who view them. Such instances are unusual. Generally the work of even well-trained artists and artisans fails to meet the entire approbation of some who are equally well trained in the art because certain qualities, not necessarily violating the principles of good design, do not appeal to all alike.

The ability to appreciate good taste in design does not imply the ability to design in good taste. It is therefore evident that, in order to improve the architecture of our farm homes, trained ability to design in good taste must be employed, and that to secure as great a variety of expression as possible, to give full play to the exercise of good taste, as many trained minds as possible must be brought to bear on the problem. These trained minds are to be found in the architectural profession. It should be possible to set up an organization among the architects of the country which would operate to supply complete plans and specifications for homes of artistic merit, at a cost within the reach of the farmer. In fact there is now an organization operating in a manner which would permit of its being included in a movement of this nature and which doubtless would willingly cooperate.

The one qualification which the architectural profession in general seems to lack is a familiarity with the conditions and requirements to be provided for in farm house design. If such an organization could be extended to cover all sections of the country its membership would include architects familiar with many of the conditions prevailing in each of the various sections but which differ from those in other sections, such as availability of materials, requirements to meet climatic conditions, local practices, etc. The requirements of farm house design vary throughout the country to perhaps a greater degree than do those of urban house design. A knowledge of these requirements could be supplied the architectural organization through the cooperative effort of various investigational agencies. The result would be a variety of plans adapted to regional conditions and avail-



A well-planned, orderly farmstead is one of the greatest assets of the farm family. Here is a good example

able for a nominal sum. The ultimate result—a great improvement in farm house architecture attained in a comparatively short time. At least the result will be no worse than those of an every-farmer-his-own-architect policy, and they will have been achieved at less cost to the farmer when his time and mistakes are taken into account.

This idea seems entirely feasible so far as plans for new houses are concerned. The remodeling of an existing house is an individual problem. It is quite conceivable that special service could be rendered by the regional divisions of the architectural group which would in time develop so as to be handled much as the complete plan service. As drawings for special remodeling jobs accumulate in a given region they could be reproduced and offered as suggestions to others who may wish to remodel.

Such a plan service, tied up with the cooperative educational program suggested, should be feasible, profitable to all concerned and above all, effective.

The Division of Agricultural Engineering of the U. S. Department of Agriculture, has accomplished a good deal by way of service to the farmer in connection with home building. It has on file a few complete farm house designs, hundreds of copies of which have been furnished to prospective farm home builders. Efforts to ascertain the extent to which these plans have been used, in whole or in part, were not encouraging largely because the recipients were unresponsive to inquiries addressed to them, but the data obtained indicated that the plans seldom met the requirements as a whole, being valuable more because of suggestions which they contained than as complete solutions of a specific housing problem. This was to have been expected in the light of what has been said regarding the great diversity of farm home requirements and the inability of any one organization to produce a sufficient variety of complete plans.

In addition to the few complete house plans the Division has issued printed matter on subjects related, entirely or in part, to home building, such as water supply, sewage disposal, plumbing, use of concrete, stucco, chimneys and fireplaces, painting, plastering, masonry, etc. The eagerness with which this material has been sought and the inability of the Division, with its very limited facilities, to develop this service beyond its present scope and influence gave rise to the thoughts expressed in the preceding pages. What the Division may be able to do, should a cooperative plan, such as has been outlined, be put into effect will depend upon what amendment can be effected in its resources. It stands ready, however, to cooperate to the best of its ability in any undertaking of reasonable promise. There is no apparent reason why its present or future activities, however limited, could not be coordinated with the efforts of other organizations in a broad program of education.

As a tentative plan of procedure it is suggested that this conference appoint a committee whose duty shall be the selection of an advisory committee consisting of a group of men and women of proper qualifications and representative of the several fields of activity which would be engaged in the carrying out of an educational program such as has been suggested. Thus the committee members should include one conversant, with general research and investigational methods, a household economist, an authority in house decoration, a construction engineer, an architect, a landscape architect, a financial authority, a real estate expert and one familiar with the operation of federal and state extension services. It may be found advisable to augment this number or to reduce it.

The advisory committee, through an executive, would engage the interest and enlist the cooperation of any and all agencies that could be employed to advantage. It would set up a program of investigation to determine the requirements of the farm home in the various sections of the country with respect to structural features, arrangement and conveniences, and would divide and allocate this investigational activity among the best equipped agencies in each section; it would outline a program for the preparation of educational material covering all subjects relating to the erection, furnishing, and operation of the farm home, again allocating the work to various agencies, or, when the subject requires regional treatment, to a group of agencies.

This program would also provide for the preparation, by authorities in the arts, of material for use in the school room and designed to develop an appreciation of the artistic in coming generations.

This information when prepared and brought together would be disseminated, without loss of identity as to origin, through all possible channels. The data relating to farm house requirements would be transmitted to regional architectural organizations to be utilized in the preparation of plans and specifications.

Agencies now engaged in this kind of work would continue their activities only modifying their programs to accord with a general, or what might be termed a national, program. Other existing organizations may be induced to participate adding to their present activities as may best help the cause.

Aside from expenses incurred by the advisory committee little or no financing should be necessary since practically all of the work would be done by existing organizations without, in most instances, adding to their budgets. There could be no objection of course to increased budgets or the setting up of new activities in institutions or organizations not now equipped for such work. In view of the interest of various bodies, organized for philanthropic and educational purposes, in undertakings of this nature there should be little difficulty in arranging for the necessary finances.

## National Conference of Parents and Teachers Asks Provision for Children

By Mrs. E. G. Quamme

President, Minnesota Congress of Parents and Teachers

THE work of the National Congress of Parents and Teachers is child welfare, first, last and all the time. If we are going to do the best for our children, for schools, for homes and equipment, make life happier for the whole family, we must consider every phase of it. I would like to say I listened all day yesterday trying to find out where you were making any provision in your home planning for the children.

In looking through twenty-eight homes in trying to find a home for myself in the city I did not find a single house where any provision had been made for the children. I have never yet found a house where they put the hooks low enough for the children to hang their clothes on.

In the matter of income, we cannot have anything left for equipment if there is not something done to get honest merchandising. I know when that matter came up a few years ago before the chamber of commerce in a large city they hurriedly wanted to table it because it affected too many

people's profits, evidently. It is time women waked up to these things.

As far as the National Congress of Parents and Teachers is concerned, we are interested in all these things because of their influence upon the child life of America, for which we are working constantly.

MR. BRINCKLOE: I might answer as to how better farm homes do provide for children in the home. In my paper I neglected to say I found a great deal of stress laid on that very question by the farm women of America. They met it in various ways. They even discussed the breakfast nook as a place where children might study and play. In some places the benches at either side of the nook had lids for holding playthings. In other cases the sleeping porch was equipped as a playroom. I might add that that is so in my own home and works very well indeed. It is glassed in and heated and has been an ideal place for my children when younger.



## The U. S. D. A. Bureau of Home Economics Contribution Toward A Better Farm Homes Program

By Dr. Louise Stanley

Chief, Bureau of Home Economics, U. S. Department of Agriculture

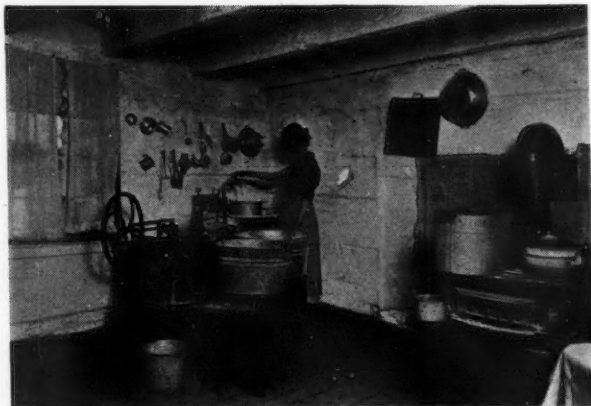
**T**HE Bureau of Home Economics of the U. S. Department of Agriculture is a little over two years old. It is continuing the work of the former Office of Home Economics, which had grown out of a division of nutrition and so was largely concerned with problems of food and nutrition. This is an important part of the farm home program, and our contribution along that line will be continued. The farm family must be properly fed and markets must be found for the food produced on the farm; the Department of Agriculture has made important contributions along both these lines. Practically all the dietary calculations in this country go back to our Bulletin 28, "Chemical Composition of American Food Materials," which was originally compiled under Doctor Atwater's direction, and which is still used both in this country and abroad. The bulletin has not been revised since 1906, and a considerable amount of our small appropriation at the present time is going into the compilation of material for a revision of it, because we feel that information which is so fundamental must be kept up to date. The data is being recorded in such form that changes in the figures can be inserted in reprints of the bulletin.

We are called upon quite constantly to send out information in regard to the normal diet. There are many agencies in this country doing much more fundamental work in nutrition than we can with our limited personnel, but it is our job to take the fundamental facts developed by other research agencies and translate them into practical terms of everyday menus applicable to homes and home conditions. That is another big job.

But in addition, this newer research in nutrition is stressing the vitamin content of foods. We know the relation of vitamins to health as never before. Another study is to add to the information on the vitamin content of foods, and to determine how it is affected by the preparation of the food, by the method of preserving and of storing in the home. Studies are being made on the practical phases of food preservation and preparation.

Work in textiles and clothing is being developed. These problems are not peculiar to the rural home, but all the homes must be kept in mind. The studies on laundry processes should be of especial interest to agricultural engineers. The farmers' bulletin on home laundering has been revised, and in doing this we realized how much we did not know.

Through the cooperation of the washing machine manufacturers, different types of washing machines have been loaned us for demonstration purposes. If a woman in Washington asks us what the best washing machine is, we say,



There is evidence here of real progress in making washday operations efficient. Note the tap for running water, the peer among modern farm home conveniences

"Come in and we will show you the different types and how they operate." Women do want a definite statement as to which is best. We can set up eventually, in general terms, some of the comparisons, but both the Department of Agriculture and the state colleges are somewhat hampered in the way we can deal with equipment problems. The industry itself should make such comparative tests.

When it comes to washing processes we can go further, and so that problem is being studied now in greatest detail. Standard dirt mixtures are being developed so the comparative efficiencies of the different methods can be measured, but the work is now being held up at the point where most of the workers on household equipment find themselves, and that is facing the fact that there is no scientific apparatus available with which to work. Work goes just so far and then it is necessary to stop until a special piece of apparatus can be built. A battery of washing machines just alike, in a constant temperature bath, is now being prepared so that this work may be continued under scientifically controlled conditions.

A bulletin is being prepared on curtaining the farm home. It is hoped that later a set of slides on this subject will be prepared.

In our economic studies, the problems underlying the expenditure of time and money in the home are being considered. The contribution of most interest to this group will come from the time studies. Time studies are under way now with rural homemakers, and these are being analyzed quite in detail. About a thousand homemakers have been keeping records for varying periods of time. These are being analyzed, and while some must be discarded, we are hoping to have data which will show how the homemaker is spending her time. That we feel is fundamental in showing where she needs equipment help.

Also, in connection with the Bureau of Agricultural Economics, standard-of-living studies have been made, which show what the rural homemakers have been spending, how they have been spending it, and what the farm has been contributing to the family living. That is one place where the farm home can be improved. Most farms can, with some effort, be made to contribute more to the family living than they have in the past. Figures are now available from about three thousand families in different states. Preliminary reports are out on this, and the food and clothing expenditures are being analyzed in detail. We shall be able to tell how adequate the diets have been, and show how they may be bettered. We know how much they are spending for clothing, and how it is apportioned. The men are spending just as much for clothing as the women, and both spend the most for clothing between the ages of eighteen and twenty-five. There is a drop after twenty-five for both men and women. But it is impossible to decide, as we can in the case of food, whether the clothing expenditures are or are not adequate.

A division of housing and equipment is to be established. We had two temporary workers in this field last year, and as a result of their work two or three bulletins will be published, one of which is a revision of our bulletin on the home kitchen. We have named the new one, "The Farm Kitchen." It is well illustrated, which we feel is important in a bulletin of this type. These illustrations will be developed later into a series of charts which may be used in kitchen improvement contests.

One equipment problem is being studied. In cooperation with some of the manufacturers, electric refrigeration units have been loaned to us for testing over long periods of time. These studies will show the cost in time, in current consumed, and in servicing. These are long-time experiments, all possible data being obtained on automatic recording devices. Later it is planned to cooperate with housewives to obtain records on similar machines used in homes.



We have worked very closely with the Better Homes in America organization and hope this year there will be more rural demonstrations; and you are the people who can help stimulate them. There have been to few of them in the past; they have a great deal to do in the way of showing what some of the possibilities are. Mrs. H. M. Dunlap's home has been run as a rural home demonstration for a number of years. We need more such demonstrations and hope a larger proportion of the better homes demonstrations this year will be of better rural homes.

There is another way in which you can help to develop these demonstrations. On every state college campus there should be two practice houses set up, one for city conditions and one for rural conditions. The one we have for rural conditions should be entirely dissociated from city utilities, and the agricultural engineering division should put in the type of equipment which might be used in any rural com-

munity. If such demonstrations were available, it would do almost more than anything else to promote better living conditions in the country.

I lived in a small town for sixteen years and my house there was opened frequently for demonstration, because there were so many things that rural women could copy. The thing which surprised me was the number of small ideas which they would take home with them, for example, a holder which held all the pot covers together near the stove where they were needed. One woman never thought of that. She was able for ten cents to get that convenience, which meant a great deal to her. A place for the dishpan right under the sink. One woman on seeing this said, "I have always wondered where my dishpan ought to go." There she saw the solution of the problem. Actually seeing it is much more effective than any bulletin or talking can be, therefore a great many more rural demonstrations are needed.

## Better Farm Homes Aim of American Farm Bureau Federation

By Mrs. Chas. W. Sewell

Director, Home and Community Department, American Farm Bureau Federation

I AM happy to come before you with a word of greeting from the American Farm Bureau Federation. I am representing at this particular time a new department of home and community work in that organization.

I think the big thing that is necessary at this particular time is for us all to understand each other better, to know what each one is trying to do. As to the American Farm Bureau Federation, I want to say that it has a particular interest in farm homes; in fact, that is the reason there is an American Farm Bureau Federation; we want the best there is for the American farm home.

A great many people yet don't understand what the American Farm Bureau Federation is. Some don't know whether it is made out of golden oak or mahogany or any of the other sorts of woods that are being used for various kinds and types of period furniture. Perhaps you are familiar with the story that is told of the county agent who went about securing memberships for the farm bureau in his particular county, and after his visit some three or four months one of the farmers wrote in to the office and asked if they would please send him the bureau that he signed for because his daughter had been married since the visit and they were going to board the school teacher. There were no bureaus in the county agent's office so he sent the letter on to the Department of Agriculture at Washington, and Secretary Wallace sent back the reply that they did not have any bureaus that they were not using at that time, but that they had a good-sized farm bloc they were sawing up into bureaus just as fast as they had time, and the first one they could spare they would ship immediately to him.

The aim of the American Farm Bureau Federation, from the national organization to the state and county, and on down to the lowest and last unit, is to advance, promote, and protect the business, the economic, the legislative, the social and educational interests of the farmer, and of course that takes into account the farm family. Therefore, any program that interests the farmer interests as well the farmer's wife, for the ultimate goal of all the money obtained from the better sale of livestock and crops is not to make wealthier taxpayers in a given vicinity, but it is rather to be translated into the things that you know and I know as better rural homes and better community life, and so we are engaged in just that sort of program. We hope to reach just as many men and women in the coming year and interest them in this big, broad program as we possibly can. We enlist your sympathy for our work. We hope that you will understand the work that we are trying to do, and I am sure that we are going to be in full sympathy and accord with the things that you are doing.

I have a little dream for the farm homes of the country and I am going to leave it with you for what it is worth:

Let the farmer sit on the porch of the big white house  
By the side of a graveled lane,

Where the Fords come by every day in the year,

In sunshine, in snow, or in rain.

Let him light his barn with electric lights and cool

His house with an electric fan;

Let him live in a house by the side of the road and

Be a friend to man.

Let the farmer live by the side of the road where the

Mall comes every day;

Let his children attend splendid churches and schools;

Give his family some time for play.

Give him courage and faith to do the many things,

To work out God's great plan;

Give to the farmer his share and his rights, and he

Will be a friend to man.



A cheerful, comfortable corner in a modern farm home

# The Better Homes in America Movement

By T. M. Sloane

Assistant Director, Better Homes in America

**B**ETTER Homes in America is a national, educational organization. It has no commercial interests, having been organized to arouse the interest of the public in home improvement, and to promote the study of ways in which communities can improve housing conditions and in which families can secure comfortable and attractive homes where home life may reach its highest levels.

This study has many aspects. On the physical side, attention is given to small house architecture, landscaping and gardening, furnishing and equipment. Social and spiritual improvement in home life are sought through the study of home art, music, reading, and play, and character building in the home.

It should be emphasized that we advocate the study of small house architecture and gardening. This means that, in general, Better Homes in America works on the assumption that in most American communities single-family houses should be available even to families with small incomes, and that such houses, each with a small plot of ground around it, are far superior to apartments, row houses, or even semi-detached houses. In most rural communities, it goes without saying that each family will have its own house, although in many of the older villages, particularly in the eastern part of the country, there is often great and unnecessary overcrowding of the land. But crowding is only one aspect of the housing problem. There is need for study of sound construction, good planting, sanitation, and the most efficient use of modern improvements.

Better Homes in America is, as I have said, a national organization. Members of its advisory council and board of directors, of which President Coolidge and Secretary Hoover are, respectively, chairman and president, represent many organizations interested in the home. Among these are the Division of Building and Housing of the Department of Commerce, the Bureau of Home Economics of the U. S. Department of Agriculture, the Architects' Small House Service Bureau, the General Federation of Women's Clubs, the Garden Club of America, and the Childrens Bureau of the U. S. Department of Labor. Special interest in rural homes is represented in the organization by the presence on the advisory council of Secretary Wm. Jardine of the Department of Agriculture, Dr. Louise Stanley, chief of the Bureau of Home Economics, and Kenyon L. Butterfield, president of the American Country Life Association.

The central office of the organization is in Washington. There are no branch offices, but a certain amount of work is done in the field by field representatives. The actual work of the better homes movement among communities and families is done by voluntary committees in towns and rural communities. These committees are chosen and led by local chairmen appointed by national headquarters. The chairmen are civic leaders in the affairs of their communities, who have been recommended by National and local civic bodies, by county home demonstration agents, and others. Right here I should like to point out that in the past Better Homes in America has recognized that improvement in rural homes is quite as important as in cities. In 1925 there were 942 committees in places of less than 10,000 population and 80 in cities. There were chairmen in 278 rural districts.

The purpose of the local committees is to study local conditions of housing and home life, and to work up educational programs suitable to local needs to improve home conditions. Here again, it is recognized that this problem of improvement has two general aspects, physical and spiritual. The local committee whenever possible, secures a house or houses representing the best the community has to offer suitable for a family of normal size and small or moderate income. Special care is taken to secure houses that are soundly built, well arranged and designed according to standards of architecture. A better home must be one which is attractive and comfortable, but the local committees also make clear that a happy home life depends on character, the spirit of cooperation, the

appreciation of beauty—in short upon spiritual attributes. These attributes are studied and discussed in churches, schools and clubs, and at special meetings held during Better Homes Week.

The part that national headquarters plays in conducting these local programs throughout the country is to advise and assist the local committees. The chairmen are appointed, whenever possible, in the fall. As soon as the chairman accepts, publications are sent from Washington with suggestions for planning the campaign. From then on, until Better Homes Week, which in 1926 will be April 25 to May 1, additional material is sent from time to time, and the chairmen correspond with national headquarters on matters of special local interest.

The pamphlet published by national headquarters which is of first interest to local committees is a guidebook, which contains detailed suggestions, arranged step by step for conducting a local program of home improvement. Another pamphlet was prepared by the Architects Small House Service Bureau, and illustrates sixteen houses, the plans of which can be secured in the usual way from the Bureau. Still another is an edition of the Department of Commerce booklet by Dr. John M. Gries of the Division of Building and Housing, and his assistant, Mr. Taylor, called "How to Own Your Home." Other publications are the result of studies conducted by Better Homes in America, and cover such subjects as home music, home play, small house furnishings, and the growing movement to equip schools and colleges with cottages for training in homemaking.

The question will be asked, What is a local better home campaign? Since in this Conference we are concerned with rural home problems I will answer this question with rural better homes committees in mind.

Local chairmen in rural districts are urged to consult early in the campaign the county home demonstration agent, the Farm Bureau unit, the Grange, the Parent-Teacher Association, local civic associations or community clubs, public schools, and nearby colleges. Home demonstration agents have in all past campaigns given most valuable assistance to better homes chairmen, and in many cases have helped to make rural campaigns county wide in scope, by coordinating the activities of local committees. Farm Bureau units and Granges have also cooperated most generously in those civic undertakings, for although their aims parallel in many respects those of Better Homes in America, it is recognized that a better homes campaign may strengthen the activities of each, by concentrating community interest in a certain week, and by getting all individuals and organizations to work together with the one aim of better homes. As I have said before, wherever possible a local committee secures a house to demonstrate. Furniture is borrowed from stores in nearby towns. If no new house is available the committee may be able to find some dilapidated old property which can be made attractive, sanitary and comfortable at the expense of a few dollars and the work of committee members. Such a house might be furnished with second-hand furniture or cast-off articles which have been reconditioned.

In addition to such a demonstration, or, if no house is available, as a principle feature of the campaign the committee will then organize a program of lectures and discussion. These may be held at special better homes meetings arranged for the whole community, and at club or Grange meetings. The home demonstration agent will perhaps give a talk on some phase of home betterment in which she is especially interested and on which she is qualified to speak authoritatively. Other speakers may be secured from agricultural colleges, Farm Bureaus and Granges, and clubs. Such meetings as these have been heartily welcomed in rural communities all over the United States and have proved their worth.

In addition to such programs, contests are arranged to inspire a friendly spirit of rivalry in improving kitchens,



living rooms, or home grounds. The county home demonstration agent will usually be found glad to cooperate in such projects.

County tours have also been found to be interesting and worth while educational undertakings. In these local committees, with the advice and assistance of home demonstration agents, have organized large parties of homemakers who have made tours of various homes in the neighborhood. At each stop the best features of the house are inspected, and short talks and discussions are held.

I have not time to describe actual local campaigns in any detail, but a short resume of a few of the outstanding demonstrations in past years may be interesting.

In 1924 the committee for Albemarle County, Virginia, secured a seventy-five-year-old house in Charlottesville, the county seat, for demonstration purposes. Although the house was in town it was suitable for a farm house. It was chosen because Charlottesville is centrally situated in the county and might be more easily visited by rural people than one somewhere else. The house had been in very bad repair, although originally it was well built. The women of the committee papered and repainted the house at a total cost of \$75. The needs of a rural family were kept in mind in planning the demonstration. The house was fitted with a farmer's office, and a workroom for his wife. The kitchen was a large one and distinctly intended for the uses of a rural family. The house was furnished inexpensively but in excellent taste.

The committee had the hearty support and cooperation of the county and district home demonstration agents, the agricultural agents, the extension workers, and boys' and girls' clubs. In addition to this demonstration, and supplementary programs, a county-wide living room contest was conducted with great success.

Another interesting campaign was conducted in 1924 in St. Helena Island, S. C. This small island is inhabited almost entirely by negroes. The negroes, under the leadership of the better homes chairmen, a white woman, working for the welfare of the inhabitants, conducted the entire campaign. The boys of the Penn Normal Industrial and Agricultural School built a house which was to be used as a practice house for training classes in homemaking. This school, by the way, is said to be the oldest school for negroes in the South. Boys and girls of the school made almost all the furniture for the house, and furnished and equipped the house completely. Some idea of the interest aroused by this demonstration and the educational programs conducted with it may be gotten from the fact that 2200 people visited the house during Better Homes Week, out of a total population of about 5500.

In 1925, at Danville, Ky., the better homes committee reconditioned a small house which had been in bad repair. By planting the grounds and decorating the house inside and out a neat, comfortable home was made. Most of the work was done by the women of the committee, and the total cost of this really remarkable achievement was \$17.25.

A campaign of unusual educational value was conducted at Alpine, Ala., in 1925. In this campaign a house was used for demonstration purposes which had been built from plans prepared by M. C. Betts of the Division of Agricultural Engineering, U. S. Department of Agriculture. The house had been built by the extension service as an example of the best type of the farm home. It is difficult to estimate the actual cost of this building from data at our disposal, since much of the work was done by unpaid help. The effectiveness of this campaign was enhanced by the use of the Department of Agriculture plan, for the attention of a considerable number of people was drawn to the fact that a few such plans are available, and their interest was aroused in efficient planning for a rural home. In addition to demonstrating this house the Alpine committee made a canvass of the community, making suggestions for improving kitchens, living rooms and home grounds where their advice was sought. Contests were held to improve kitchens and home grounds and an all-day community meeting was held at which lectures and discussions were arranged on subjects relating to home improvement.

The 1925 campaign in Benton County, Oregon, was notable in that although there was no demonstration house, a most

effective county tour was arranged so that different types of modern rural homes might be visited and studied, with special emphasis upon reconditioning and remodelling old houses to make them efficient and comfortable. Three hundred and fifty school children entered a better homes essay contest, and all the Boy Scouts in the county joined in a campaign to clean up and improve home grounds. Many civic organizations held special meetings, and in general it may be said that the whole county participated in and shared in the benefits of the campaign.

I have described the purpose and the activities of Better Homes in America. The need for home improvement has been pretty generally recognized by many governmental and civic organizations. Our experience has shown that there is a need for better homes. There is also a strong desire on the part of people in all kinds of communities for information as to how they can improve their present home and how to attack the problem of acquiring new ones.

The chief immediate need as we see it is the establishment of rural home architectural services by state universities and agricultural colleges in each state. Such service could be supplied with the cooperation of the state branches of the American Institute of Architects. One purpose of such a service would be to supply standard plans for rural homes. It would be impossible for any national organization to draw up plans for houses which would be suitable in every part of this country. Such a task is essentially one for state institutions, and it is true that already the state universities or extension services in fifteen states have prepared small numbers of plans for rural houses, which are distributed either free or for a nominal charge. Since the planning of the farm home involves problems of design which are quite different from those of city or suburban home, and since architectural types and living arrangements vary in different regions of the United States and with different climates, the establishment of such a service offers an exceptional opportunity for useful and much needed educational effort to every state in the union.

If possible, such a service also ought to be prepared to advise rural homemakers in problems of remodeling, sanitation, landscaping and the grouping of farm buildings. An excellent means of popular education in such matters would be motion pictures showing remodeling in process, and how changes can be effected in rural home landscaping. Such pictures might show the remodeling of kitchens, porches, water supply, and rural plumbing. The movies also offer a splendid opportunity to show the advantages of an efficient kitchen arrangement.

The United States Department of Agriculture and other federal departments have prepared bulletins and moving pictures of great educational value. But there are always problems peculiar to cities and smaller communities, which can best be solved by state or local agencies, and such a service as I have outlined, would, we believe, be very useful in supplementing the excellent work done by the federal government.



With the aid of competent architectural advice marvelous results can be obtained in the remodelling of old farm houses



## Work of the U. S. Department of Commerce in Building and Housing

By Dr. John M. Gries

Chief, Division of Building and Housing, U. S. Department of Commerce

**H**OUSES are built in very much the same way with very much the same materials whether they are on the farm or in the city. Many of the same materials go into them that are used in other types of buildings and in large engineering construction. The work of the Department of Commerce and of the Division of Building and Housing applies in some measure to home building, no matter whether it is on the farm or in the city. During the past five years the Department has tried hard to adapt its technical studies so that they will help the home owner and home seeker. We have also worked with many groups of business men with the same end in view. I hope that a brief outline of what we are doing to help make building cheaper and to keep maintenance costs as low as possible may lead to a wider application of our work to problems of the farm home.

One of the first things Secretary Hoover did in organizing the Division of Building and Housing was to appoint an advisory committee on building codes, consisting of nationally known engineers and architects. It first took up regulations concerning small house construction. There are usually no building codes which apply to a farm house telling how thick the walls should be built, how heavy the floor joists must be, and so on. But in order to do its work properly the committee had to go very thoroughly into the details of small house building, and it obtained a great many useful facts on the subject. It put many of these into the appendix, and with the code itself, the whole report makes a very handy manual for anyone building a house. It takes up in detail the precautions necessary for obtaining a sound and durable house as inexpensively as possible. It gives details for correct framing, tells how thick foundation and masonry walls should be, where fire-stopping is most important, what precautions to take in a built-in garage, and many similar points.

A similar committee was assigned by Secretary Hoover the task of framing a set of rules for installing house plumbing systems. When the committee got to work it discovered that no thorough study of what goes on in a house drainage system had ever been made. In order to make sure of avoiding siphonage in traps or other dangers, it was always necessary to make an expensive installation with many vent pipes. The Bureau of Standards went ahead with tests which took more than two years to complete, and as a result the committee was able to include sketches and tables showing just what venting and sizes of pipe are required under given conditions. The cost of a small house plumbing installation following the committee's advice is ten to twenty per cent below that required by practices which were followed in many localities. At the same time risks of insanitary systems are practically eliminated.



A fine example of a modern farm home of brick construction

The Division of Simplified Practice, although its work may be unknown to many property owners, is doing a work which is of direct advantage to everyone who builds or repairs a house. That Division gets together with private industry to reduce the number of standard sizes of many building materials. The single case of mortised locks and hinges for doors illustrates the advantages of such a program. In the future it should be possible to obtain locks of several standard makes which would fit the same recess in a door, and take the same sized knob, regardless of differences in internal design. Each simplification agreement is arrived at and endorsed by manufacturers who make the article, wholesalers and retailers who sell it, and architects, engineers, contractors, and representatives of building trades labor and owners of buildings, who are concerned in its use. There is thus sufficient guarantee that each agreement will be in the interest of the consumer. The chief simplifications for building materials reached in this way include eliminating sixty per cent of varieties in soft wood lumber sizes, establishing one standard size of common brick in place of forty-four sizes, nineteen types and sizes of hollow building tile instead of thirty-six, eleven sizes of steel bars for reinforcing concrete instead of forty, and so on through hundreds of items that go directly or indirectly into a building. Each one of these agreements helps the manufacturer to produce at lower cost, and give prompt deliveries. It cuts down the difficulties of doing business for the wholesaler and the retailer, and it makes it easier for the purchaser to obtain better service and a better quality of goods, and, in some instances, lower prices. We believe that simplification has already saved the consumer a great deal during the past two or three years, and when standard sizes have been in use for some time, obtaining materials and parts for repairs will be very much easier. A program is in effect for metal beds, bedsprings, and mattresses, so that the housewife who purchases standard sizes will find no difficulty in replacing wornout items, or in interchanging mattresses.

Likewise little known or appreciated by many of those who use building materials or buy buildings, are the studies which the Bureau of Standards has made of the strength and use of building materials. The specifications for Portland cement, for example, which are accepted as standard throughout the country are founded on a long series of tests at the Bureau. A trained staff with a good equipment of modern appliances is constantly at work to develop new knowledge concerning the safe, economical and durable use of materials in actual structures, and economy in manufacturing processes. There is a long list of materials ranging from different types of brick, hollow tile, gypsum products, reinforcing steel, and lime, to paints, varnishes and glass, whose quality as commercially produced has been raised and whose use in design has been improved through the Bureau's work.

Most people who buy building materials and household articles know the difficulty of obtaining the right quality of material for a given purpose. They want to be able to count on good performance, without paying fancy prices. The government has the same problem in buying its own supplies, and has set up a board with headquarters at the Bureau of Standards to prepare specifications for materials purchased by the government. It has specifications for soap, for paint, for glass, or leather, and for many other materials used in the home. It has also assumed leadership in the adoption of uniform specifications for purchasing by state governments and commercial organizations. In this way the government standards are spreading to a greater and greater extent through commercial channels. The Bureau has published for the use of the householder a booklet, entitled "Materials for the Household." For buying organizations or others who may take a special interest in purchasing it has issued a

directory of specifications used for more than six thousand commodities by the federal government and other public and private purchasers. An encyclopedia which will include the text of many of the more important specifications is now being prepared.

A committee on wood utilization, recently formed to work with the Department, has just embarked on a broad program for elimination of waste. It is aiming to assure less waste in the woods and at the sawmill, more orderly selling and storing of lumber so as to avoid losses from rot and poor seasoning, more use of short and odd lengths of lumber, and more economical use among consumers. It is hoped that this program, which is being carried on hand in hand with many other agencies, will result in savings to the farmer who purchases lumber.

One of the greatest sources of waste in the building ma-

terial producing business has been the irregular movement in demand from month to month and year to year. In cooperation with the construction industries the Department made a special study of seasonal operation in the construction industries, and already building activities are becoming more even throughout the twelve months of the year. This permits cheaper and quicker production and handling of building materials, and is to the advantage of buyers. The Department also hopes to help stabilize building activity more evenly from year to year, and its work on current statistics regarding construction and construction materials also tends to prevent temporary shortages and erratic changes in prices of building materials.

The Division of Building and Housing has also worked closely in connection with the Better Homes in America movement.

## The Interest of the American Home Economics Association in Better Farm Homes

By Eloise Davison

Assistant Professor of Household Administration, Division of Home Economics, Iowa State College

THE American Home Economics Association is a nationwide association made up of several thousand members and contains eight different sections geographically located for the sake of convenience and for carrying on the different activities of the associations. It has local interests in forty-seven affiliated states through the state associations. Its headquarters are at Washington, and the official organ of the association is the "Journal of Home Economics," in which is reported the progress being made and new plans for the development of the work. The association is only about sixteen years old.

The work of the association is developed through different committees, which, generally speaking, are the following:

(1) Food and Nutrition Section, one of the oldest sections and I believe one that most people think of first when they think of home economics. Many people still think of home economics as being confined to foods and clothing.

(2) Home Economics and Education Section.

(3) Home Makers Section, which deals with the problems of family and community relationships, child care and training, and general home management studies.

(4) Institutional Economics Section, which deals with the larger problems outside the home, such as food planning, foods for cafeterias and tea rooms, hospitals, etc., because a great many of our trained people are going into that kind of work.

(5) Textiles and Clothing Section, and in that we are thinking of good buying as well as satisfactory making of clothing, because there are so many people who need to think of those standards since they are not making their own clothes.

(6) Home Economics in Business Section.

There are other interests that are not definitely represented at the present time, as special sections, and which up to the present time have found expression through some of the others that I think are worthy of mention. In a number of our schools we find that physical education is a part of our home economics training, and we feel that that is rather an important step because it functions as a part of actual living more than it does in some other connections.

Then, of course, the question of art in the home, which is very much worth while emphasizing here, is a part of home training worthy of special consideration in home economics. We think of art as a thing definitely applied and that it functions especially as it is applied. The fact that the American Home Economics Association represents teachers, home makers, and extension workers, if we wish to differentiate them from teachers, means that it can reach a great number of people. The fact that the association deals largely with trained people and people who are thinking in terms of education, of course, means another good opportunity for developing some of the big problems.

The question of better farm homes as brought out in the National Farm Homes Conference is a thing we are most interested in and to which we wish to lend our support in every way possible, because in this association are a great many people with special training along the lines that should contribute to such a program, and the American Home Economics Association is most interested in lending its support in whatever ways it can to the development of such a program.

## How the Farm Papers are Promoting the Better Farm Homes Movement

By John F. Cunningham

Publisher, Wisconsin Agriculturist. Representing American Agricultural Editors Association

I HAVE been interested in the proceedings of this conference and can assure you that the farm papers of the United States will support any sensible, practical movement that can be started to promote better farm homes.

The fact of the matter is the farm press has for many years been working along these same lines, possibly not so definitely as some of the agencies are working today, but certainly with just as good intentions. I recall that twenty-one years ago I was responsible for getting out what some folks told me was the first prospectus that a farm paper ever issued, that is, telling what the paper was going to have the following year, and one of the features of that prospectus was an architectural service that we were offering to our subscribers. The response to that service was very surprising. In fact, it was so strong that we were soon way behind with our schedule and had to put on the brakes.

As might be supposed, that particular architectural service

called largely for barn building and barn improvements. We had some calls for residential buildings and improvements, all in line with the statement made yesterday, that when it comes to improvements the farm man is generally more progressive than the farm woman. There undoubtedly is a very definite reason for that because, especially in the newer countries when the man and wife have gone out as partners to build up a business, and at the same time develop a life, the business considerations must come first. As has been very well said here, it is impossible to develop some of the things we wish to do by way of farm home improvement until we have the funds available. So that it seems to be a portion of farm life, especially that farm life which starts in the pioneer stage, to hang about the individuals in the household sort of a halo of sacrifice or self-denunciation—I don't know how better to describe it than that—but it really does seem that a lot of the really good folks of our rural districts con-



sider it their duty first to just sacrifice, to "pass up," if I may use the term, a lot of these things which they really want in their hearts.

This conference has a certain definite direction. All conferences, of course, are more or less general, and possibly line up with what Mark Twain said about the weather: "Everybody is talking about it, but nobody does anything about it." I don't think, however, that that will apply to this conference because there have been some very definite, constructive suggestions made. I don't believe that you expect more of me at this time than an assurance that the farm press as represented by the American Agricultural Editors Association is with you. The farm papers that are really doing things, and I can assure you that there are a large number of farm papers in this country that are really doing constructive work; these farm papers, I say, are very definitely interested in the improvement of the farm home.

Someone made a reference here to the fact that in improving farm homes it was frequently found that an addition would be made to a house of a certain type of architecture, which did not harmonize with that type. Realizing this danger, and it is a danger because it brings great disappointment, some months ago a number of farm papers in the country adopted the plan of visualizing possible improvements, and we did this by printing in the paper two pictures, one of the home as it is, the other the picture of the improvement to be added, with the suggestion that the improvement to be

added be cut out and pasted over the house that is to be improved. Then you would get a picture of the improvement as it would be when the addition was made. The purpose of it was actually to show what the improvement would be, and I don't believe any better way can be devised of helping people to make necessary improvements. You know the demonstration method has been proved the most effective. Someone said awhile ago such a little thing as hanging up a simple device to hold lids was a lesson that was thought to be the biggest lesson that that demonstration teacher held. Another found the most interesting thing was the hook where the dishpan was held below the sink. You can talk about it a long time, but show it to the person and he gets it.

Our experiment stations all use the demonstration method, and through the farm press we offer to you the demonstration method, trusting, of course, that from the American Society of Agricultural Engineers and all of the various agencies that are brought together in this conference we will secure the material and the illustrations that we then can put into the channels of the farm press and carry out to the farmers of America.

It may interest you to know that the organization called the American Agricultural Editors Association command a circulation of something over 10,000,000, and, therefore, I feel that in offering to you the services of our papers I am offering you something worth while.

## An Analysis of Farm Home Needs

(Continued from page 121)

great many difficulties in the way, chief of which is that no inspection is practical in the case of a farm house, because of its isolation and because of the cost of making that inspection, certainly no inspection made by state or county authorities. Even the insurance people find the cost of making an inspection would probably be prohibitive at present, but we are working up to it. The question of the farm chimney, of fire stops, etc., is vital. The only thing where there is any inspection of farm construction is in the matter of electrical equipment; electrical wiring in many localities has to be inspected.

MR. WOOLEY: I wonder if Mr. Brinckloe got any idea from the contest he refers to as to the knowledge of the farm women in regard to what they could have at the present time.

MR. BRINCKLE: Of course, all the plans, etc., were sent in stating "what we would like to have." That is what we asked for, but in a great many cases they said, "This is the house we built last year;" "This is the house we are going to build this year;" or something like that.

MR. TURNER: I wish to follow up the question I asked this morning relative to bathtubs. To have the bathtub, there must of course be a waste system and supply system of some kind. There is a question in my mind as to whether we should go ahead and advise farmers to put in a bathtub with a temporary drain and supply. Later when another piece of equipment, perhaps the lavatory, is installed, it is necessary to again tear up the floor and wall to connect to the pipes for the tub. Should we not, rather, make standardized plans of rough plumbing and have farmers install that first. Then purchase the tub and attach it, then the lavatory when it is purchased. Later the stool can be added to the outlet left for it. Is that not better than just a haphazard way of attaching a tub. The haphazard method is expensive as its work and installation would be wasted when additions are made.

MR. BRINCKLE: Perhaps Mr. Turner is correct, but I had in mind such an exceedingly simple thing that the wastage would be more or less negligible. The tub would merely sit on the floor of the bathroom. In many cases it would not even have a pump to supply it; it would be supplied by water carried from the kitchen. Therefore it would have to be very close to the kitchen. There would be a waste, but that would generally be just a pipe run out above the floor and

possibly run into a gutter or terra cotta tile drain, which would continue on down to some point where the effluent would not be objectionable. To that you could not very well attach any other fixture.

If you put in a lavatory you would probably simply run another pipe outside, then run a line of drain tile and connect to that, all of which would be merely a matter of a few hours of labor in odd times for the farmer, and you could hardly charge that against the total cost of the whole thing. But at the same time I fully agree that it would be desirable to have a complete layout or standard plan which would get the system started in in the right way, the only difficulty being that, if it were started out in the right way, the preliminary cost would be much higher.

## What We Farm Women Want Our Homes to Be

(Continued from page 124)

dishonesty a common occurrence because back of the individual has been a negligent and uneducated parenthood.

Twenty-seven million of our boys and girls are without any religious or spiritual training because the parents are indifferent to the spiritual life and do not know how to lead their children to desire spiritual truth and understanding.

Today the greatest work before every conscientious citizen and homemaker is to help remake the home, whether urban or rural, into one of spiritual and physical fitness that old and young may find health and happiness and a proper expression of their earthly existence.

Most of our farm women want good living conditions for their homes and are willing to work and sacrifice for them. With the cooperation of many organizations and the housewife's willingness to accept better helps and methods, we confidently look forward to a great improvement in the farm home in the near future.

## Modern Plumbing and Heating as a Factor in Farm Home Improvement

By A. P. Eberlin

National Trade Extension Bureau of the Plumbing and Heating Industries

**T**HE plumbing and heating industries, I assure you, are in thorough accord with the aims and purposes of the National Farm Homes Conference. We are ready and willing to continue to do our part as we have been doing in the effort being made to improve and uplift farm home living conditions. Not because of the increased business such improvements might bring to our industries, but because agriculture is the foundation or underlying industry. We realize that agriculture is at once the most permanent and the most important of all businesses, and because an adequate food supply is the first and greatest concern of any nation, we understand the necessity of making agriculture attractive, inviting, efficient, satisfying and profitable.

In order for agriculture and rural life to reach its highest development, the farm home must be made as satisfying to the whole family as the farm is to the farmer. A farm house is a vital part of the farm. A better farm home is something the farm family will henceforth demand; otherwise they will work at something else where the rewards are sufficient to permit of comfortable living.

Reducing or minimizing the drudgery, overcoming the hardships and discomforts of the farm family, especially that of the farm woman, is the greatest and most potent factor in making for happiness, satisfaction and progress in farm life. To make farm life satisfying farm folks must have a home in which at least some of the creature comforts can be had.

Thoughtfully planned, conveniently arranged, and carefully constructed buildings are as essential in the country as in the city. Running water is the pivot upon which modern conveniences and comfort turns. No one single thing brings so much relief to farm women in meeting their endless tasks as does running water. It is undoubtedly the greatest need in rural life today on more than two-thirds of the farms. The advent of the bathtub, the indoor toilet, and other conveniences dependent on running water, bring not only untold release from drudgery, but a sense of pride and ownership, which is as important a factor in a woman's success in her daily round of work as is modern machinery in the success of the farmer.

Some type of modern heating equipment in the farm home would also materially lessen the daily work of the farm woman. Such installation would keep the entire house comfortable and usable throughout the winter. Heretofore the farm family has too frequently contented itself with going to bed in chilled rooms and failed to connect lack of warmth and of facilities for bathing and dressing with ailments and resultant doctor bills, which expense would in many cases pay for a modern heating system.

Interesting and startling facts were disclosed in a survey conducted a few years ago by the U. S. Department of Agriculture. Out of more than ten thousand farm homes visited

in the eastern, central and western states, it was found that more than 90 per cent were without the convenience of running water. In 96 per cent of these homes the family washing was done by the housewife. In 61 per cent of these homes it was necessary to carry water for household use an average distance of 39 feet. The total weight of water so used in a year averaged 49 tons. More than 82 per cent of these farm homes had no modern bathing facilities. On 65 per cent of these farms the stock was watered from ponds, or it was necessary to pump and carry the water. Approximately 87 per cent of the homes surveyed were heated by stoves. The average number of rooms per house was 7.87 and the average number of stoves per house was 1.6. We say these facts are indeed startling when you take into consideration that a large proportion of the buying power of the nation is in the hands of the farmer.

Investigation shows that the average farm wife works 13.2 hours daily. Ninety-four per cent of them do the family sewing; 89 per cent care for the chickens; 78 per cent bake bread; 45 per cent milk cows; 22 per cent help in the fields. Surely this work is important enough to justify the same attention to saving of time and labor as is the case with the field work. In addition to all the other work the farm wife must do, she certainly should not have to pump and carry all of the water for household use. Think for a moment also how a modern heating system alone would make for farm home happiness, contentment, economy and profit.

Child life is a vitally important factor in rural districts, and for the future of our agriculture, if for no other reason, as intelligent an effort should be made and as much money should be expended to safeguard the child life on the farm, as to safeguard other life that has to do with the building up of the farm. Even though the farm home be provided with an automobile and a telephone, the farm family is very often obliged to act unaided in case of sickness or serious accident. This is due to the average distance the farm family is from the family doctor, the trained nurse, or hospital. Therefore, modern plumbing and heating—running water, bathtub, indoor toilet, heating plant—installations which promote health, reduce sickness, prolong life, and make for home contentment and happiness—installations, if you please, which increase the selling value of the farm to a far greater degree than their intrinsic cost—are without doubt the very first and especial prerequisites of a better farm home. A house without adequate and efficient plumbing and heating can never be a real home. Prosperity on the farm and efficiency in the house are only valuable as they make people better, wiser and happier by creating and multiplying opportunities for richer and more satisfying rural home and community life. Our object or slogan, therefore, should be to have every farm home economically sound, mechanically convenient, physically healthful, socially interesting and morally good.

## The Agricultural Engineer and the Farm Home

(Continued from page 131)

engineer. He does not know that this letter is to be quoted. His name, therefore, will not be used. But he starts out with this statement in a letter to a friend in an adjoining state: "Just as your letter arrived I was leaving town to go to my old home in Kansas for a week's plumbing and electrical work. My father had been operated on and I went home to help get him back from the hospital and do a little engineering for the sake of a mother who now has her hands too full and strength too near spent to continue pumping water with a double-action force pump from a cistern to a pressure tank."

We have seen our mothers grow old years before it was necessary; we have seen the results of inconveniences which should not exist. But enough has been said to show the close relationship which exists between agricultural engineers and the farm home.

Many problems demand immediate attention. In the first place, the cost of construction is entirely too high; in the second place, we do not know as much as we should on how to equip farm homes with modern conveniences inexpensively. In many quarters all that is needed is a better understanding of the importance of the subject and a better understanding of how labor-saving equipment can be added to the farm home.

In closing I would like to say that as far as it is humanly possible to do so, the agricultural engineers, collectively and individually, will cooperate with anyone or any organization interested in this subject. Wherever possible we will obtain the cooperation of others, for this is a subject which requires the best efforts of everybody interested in any phase of the farm home.



## LETTERS

The Editor welcomes letters from A.S.A.E. members and other readers discussing the contents of AGRICULTURAL ENGINEERING or any question related to the agricultural-engineering field, but he reserves the right to judge as to the suitability of such letters for publication. Neither he nor the Society will undertake to be held accountable for the facts and opinions presented. The Editor also welcomes for publication such correspondence between A.S.A.E. members relative to Society activities and the general development of the agricultural-engineering profession as would be of general interest to the field.

### A PLEA FOR A FARM HOME DESIGNED FOR PROPER HEATING

Mr. Raymond Olney,  
Secretary, American Society of Agricultural Engineers  
St. Joseph, Michigan  
Dear Mr. Olney:

ON LOOKING over the program of the National Farm Home Conference which your society is sponsoring, there is one subject for which I looked in vain. Although it may be included under some of the other subjects, I failed to find evidence of any specific attention to the matter of heating the farm home. If the American farm home is to be the nucleus of all that is sound and wholesome in American life it must at least be comfortable. If the much-touted radio is to bring the world's artistry and erudition to the farm fireside, that fireside must be something more than a developer of heat stroke at one end and chilblains at the other. Having grown up in one farm home and having lived in another, and naturally having been in many others, I can say that comparatively few are adequately or economically warm. If we were to blame the architectural engineering fraternity for conditions in structures, with which they have had all too little to do, we might say that the architect regards the farm house as a country home to be occupied only during the summer months while the occupants spend their winters in Florida or the isles of the southern seas. Possibly the personal habits of architects lead them to think that winters in balmy climes are general practice, but farmers and agricultural engineers have to be at home and on the job when the mercury has run into the bulb and Boreas has a clear track all the way from Medicine Hat.

The fireside, in the literal sense, is a figure of speech. The base burner has succumbed to the little differences of opinion between the anthracite miners and the operators. The omnivorous soft coal, corn cob and wood chunk stove persists, but is recognized as something to be endured only until a real plant can be secured. Perhaps the most widely used present form of modern heat, and the practical ideal of most farm homes, is the hot air furnace, or as its friends prefer to call it, the warm air plant. At present, and undoubtedly for many years to come, it will be the typical heating system with which designers of farm homes must reckon.

Yet whoever heard of a farm home being designed for warm air heating? For that matter, whoever heard of a farm home designed for any system of heating whatever? About as far as the architect goes is to tolerate a chimney, and this seems to be designed and located chiefly with respect to its artistic value as a bit of exterior adornment, or possibly as an adjunct to a fireplace.

Whoever saw a house, let alone a farm house, designed with two-by-six instead of two-by-four studding in certain of the partitions, to permit the use of warm air ducts of any where near adequate size, such as to permit adequate and effective heating in the face of a forty-mile breeze at twenty degrees below zero? Whoever saw a farm house with partitions so arranged that every upstairs room can have its own vertical warm air duct without horizontal offset between the floor joists? Whoever saw a farm home so designed that a warm air installation can be made without sawing out most of the joists supporting the first floor partitions, leaving them hanging in mid-air until the farmer props them up with a post? Whoever saw a farm home in which the basement warm air pipes were connected with the wall ducts without a constriction of 40 to 70 per cent in cross section as compared

with the round pipe supplying it and which the farmer has been led to pay for in the belief that it afforded ample capacity? Whoever saw a farm home so designed that it was physically possible to provide adequate cold air duct capacity, even if there could be found a heating contractor with sufficient intelligence and conscience to make the installation? Whoever saw a farm home that did not have several times as much cold air circulation in the stairway as in the passages officially designated as cold air ducts? Whoever saw a farm home warm air installation in which the efficiency of the cold air ducts was not reduced 50 per cent by constrictions and unnecessary or improper bends? Whoever saw a farm home basement so designed as regards arrangement and depth, and the chimney so located, as to permit a really efficient warm air installation? Whoever saw a warm air installation in a farm home where the warm air registers for first floor rooms remote from the furnace were located on the side wall near the ceiling to take advantage of an 8-foot convection head instead of the 2-foot head obtainable with a floor register? In short, whoever saw an engineered job of warm air heating in a farm home?

It probably is not typical, but it is a fact that in my rather limited observation of these things the best warm air engineering I ever have seen in a farm home has been worked out by the farmer himself and installed either with his own hands or under his personal direction and supervision. One installation which I have particularly in mind did not even have a regular furnace, but consisted of an "oak" stove inclosed in a brick vault. Probably the stove itself was not very efficient in shelling the B.T.U.'s out of the fuel, but the location of the vault with respect to the chimney (which itself was located in the house according to the farmer's own ideas) and the space to be heated, the location of hot and cold air registers, the cross sections and layout of both warm and cold air ducts, the insulation of the heater enclosure, the warm air pipes, and even the smoke pipe, were sufficiently well engineered to give results superior in effectiveness and comfort to any of the commercial installations made in that neighborhood at that time, which was some twenty-five years ago, and would compare favorably with the better class of commercial installations made today. It should, in fairness, be stated that the installation mentioned was not intended to provide seventy degrees for the entire house of ten rooms.

As I see it the situation calls for recognition of warm air heating in the original designing of houses, and that takes cooperation between architect and real heating engineers. In the particular case of the farm home the extension workers and other agricultural engineers have a part to play. As you probably know the engineering experiment station of the University of Illinois has for some six or seven years been conducting studies of warm air heating, and probably has contributed more to the science of home heating by this method than any other single agency.

Very truly yours,

WALTER B. JONES

St. Joseph, Michigan

### A National Homes Congress

AN AMERICAN Homes Congress will be held in Des Moines, Iowa, the week of November 15, under the auspices of the American Home Bureau of the General Federation of Women's Clubs and all other organizations interested in the home and its betterment.

The program of the conference will include every question confronting the American home in city, town, and on the farm. The program will extend over a period of four days and will consider such subjects as the building and financing of the home, the home equipment and efficiency in giving opportunity for a higher standard of living, the adjustment and organization of family life in the home, recreation and association of the family group, cooperation of all the family in solving the problems of the home, and the development of personality through religious and artistic culture and the relation of the family unit to the community.

Because of its interest in the betterment of the farm home, the American Society of Agricultural Engineers has been invited to participate in this congress.

# Research in Agricultural Engineering

A department conducted by the Research Committee of the American Society of Agricultural Engineers

## The Vital Need for Greater Financial Support to Pure Science Research\*

By Herbert Hoover

Secretary of Commerce

I WISH on this occasion to say something upon our great national need of a much more vigorous support to pure science research in our country.

There is no body of men more interested in the advancement of pure science than our engineers, for the engineering profession is built upon the application of scientific discovery. And of larger vision, if we would command the advance of our material, and to a considerable degree, of our spiritual life, we must maintain the earnest and organized search for truth. We could well put such an appeal wholly upon moral and spiritual grounds; the unfolding of beauty, the aspiration to knowledge, the ever-widening penetration into the unknown, the discovery of truth, and finally, as Huxley says, "the inculcation of veracity of thought." All are ample justification for our finding dollars to keep these searchers alive. But as I am proposing to support an appeal for dollars, I propose to discuss the dollars' results as well.

Research in the biological and physical sciences takes two forms; industrial research (which is the application of science) and research in pure science. Obviously, there must first be a pure science before there can be an application. I am aware that there is a twilight zone between them, but no scientist has difficulty in finding the borders.

While we have in recent years developed our industrial research upon a scale hitherto unparalleled in history, we have by no means kept pace in the development of research in pure science. We have an increase in some ten years from one hundred to over five hundred laboratories engaged upon search for application of known scientific fact and law. These results have been magnificent. But all these applied science laboratories are dependent upon the raw material which flows from the laboratories and men engaged in pure science. And the industrial investigators are the first to demand more support to pure science.

Not only is our Nation today greatly deficient in the number of men and equipment for this patient groping for the sources of fundamental truth and natural law, but the sudden growth of industrial laboratories has in itself endangered pure science research by drafting the personnel of pure science into their ranks—depleting at the same time not only our fundamental research staff, but also our university faculties, and thus to some degree drying the stream of creative men at the source. Thus applied science itself will dry up unless we maintain the sources of pure science. This is no complaint against our great industries and their fine vision of the application of science. It simply means we must strengthen the first line of our offensive. The day is gone by when we can depend very much upon consequential discovery or invention being made by the genius in the garret. A host of men, great equipment, long patient scientific experiment to build up the structure of knowledge, not stone by stone but grain by grain, is today the fundamental source of invention and discovery.

Compared with other expenditures of far less importance to human welfare, the amount of money annually devoted in the United States to the aid of investigators and investigation in pure science is absurdly small. It is less than one-tenth what we spend on cosmetics. We have, indeed, some

fine foundations for pure scientific research—the Carnegie Institute, the Smithsonian Institution, the Rockefeller Institution, and the many other research activities of much more limited but special endowments. The work of our universities, together with the work of the National Research Council and our government agencies, have shown fine accomplishment in this field. But the whole of the income available from these sources for research in pure science certainly does not exceed \$10,000,000 a year—whereas in the professional schools of our universities, in technical and agricultural colleges and experiment stations, in industrial laboratories, and in our Government bureaus we probably expend today \$200,000,000 a year upon applied science research.

The wealth of the country has multiplied far faster than the funds we have given for these pure science purposes. And the funds administered in the nation today for it are but a triviality compared to the vast resources that a single discovery places in our hands. Men of science know, from their own experience, how seriously scientific work has been impeded by lack of resources, and they will appreciate how great, in the aggregate, must be the resulting loss to the nation and to the world.

The progress of civilization, as all clear-thinking historians recognize, depends in large degree upon "the increase and diffusion of knowledge among men." It is not merely a question of applying present-day science to the development of our industries, the reduction to the cost of living, the eradication of diseases and the multiplication of our harvests, or even the diffusion of knowledge. We must add to knowledge, both for the intellectual and spiritual satisfaction that comes from widening the range of human understanding, and for the direct practical utilization of these fundamental discoveries. A special study in an industrial laboratory, resulting in the improvement of some machine or process, is of great value to the world. But the discovery of a law of nature, applicable in thousands of instances and forming a permanent and ever available addition to knowledge, is a far greater advance.

Radio communication would have remained not merely impossible but wholly inconceivable except for the fundamental experiments of Faraday, the mathematical formulation of the wave theory by Maxwell, and the experimental realization of Maxwell's predictions by Hertz; successive advances in knowledge made without thought of immediate application or financial return.

No newspaper headlines noticed Becquerel's discovery of radio activity from which long after sprang the whole train of discoveries leading to radium and its vast human service. No one reads in the popular journals of the theory of the hydrogen ion. We do hear sometimes of the effect in economy and production that its understanding is having upon scores of industrial processes, but how many know the name of the scientist who has added billions in money value to the world? And I am not sure he had even a stenographer to save his time in his race in search of other laws. The rise of the Einstein theory, which has revolutionized physical science and fundamentally affected modern thought, was rendered possible by the most abstruse developments of mathematics over long terms of years, and who may say that some day it may not become the raw material of our industrial labora-

\*An address before the American Society of Mechanical Engineers, New York, N. Y., December 1, 1925.



stories with a fine outpouring of benefits in added human comfort and convenience?

If we were to survey the nation, we should find that the technically trained men engaged in pure science research fall into two main groups; on one hand, those supported in the great pure science research institutions, and on the other, those in our universities or engaged in individual investigation. The number supported by our pure science research institutions, such as the Carnegie, Rockefeller, Smithsonian, and others probably does not exceed five hundred technically trained men. Those engaged in pure science research in our universities or upon their own resources probably do not exceed five thousand, and most of these devote only part of their time to this work. And there are some men in our industrial laboratories who are engaged in pure science work.

It is an interesting contrast that the scientifically trained personnel in applied science investigation today probably exceeds thirty thousand.

The problem as I see it is to secure much larger support—

First. To our university men, in order that they may be able to give a larger proportion of their time to research, and that our universities may increase the number of men.

Second. To coordinated research for certain definite purposes.

Third. To the pure science research institutions.

It is on the men in independent research and in our educational institutions that the great burden of scientific advancement must always rest, and from them that the inspiration of the younger generation of oncoming scientific workers is derived. What we need above all things is the better support of these men. They should not, by the necessities of living and the cost of equipment, be forced into our industrial laboratories. Those men who show an aptitude for research should be less engulfed in teaching. Often their productivity can be greatly aided by being released from teaching and administrative demands and endowed in research positions. Much can also be done by providing them with instruments, skilled assistants, measurers, computers, and stenographers, and all the aids that the nature of their researches and the most economical use of their time may demand. To attempt to herd them into great laboratories, even for pure research, is often their least useful service. To alter their mode of life and thought would merely result in the exhaustion at the source of the vital essence of their success. Moreover, the very researches which they prosecute and the discoveries they achieve demand just such concentration of attention and originality of perception as their freedom tends to foster.

There is no price that the world could not afford to pay to these men who have the originality of mind to carry scientific thought great strides—and they wish no price. They need opportunity to live and work. No one can estimate the value to the world of an investigator like Faraday. Our whole banking community does not do the public service in a year that Faraday's discoveries do us daily. As national assets, men of his type, even when much less gifted than Faraday in the past and Millikan today, are beyond valuation, and no effort should be spared to facilitate their work. Only thus can they be reasonably expected to make the best use of their willingness to advance knowledge and therefore civilization, without thought of personal gain.

The universities in which most of them are employed are not to be blamed for this, because they do maintain vital interest in research and they would be glad to devote much larger sums to its support if the pressure of other demands would permit. In seeking assistance elsewhere the investigator encounters ample good will but sadly inadequate means. We may make these academic posts so attractive to the student of science that he will seek and occupy them permanently because of the opportunities they afford him to advance knowledge by original research without anxiety for bread and family and equipment. It is true that money cannot buy genius but many a genius in science has defaulted because he has had to eat.

Aside from direct support to these men there is another method of organization of research among them that is no less in need of support. That is, coordinated research in specific directions by men in different localities—again, men mostly in our universities. Some of these are broad inquiries,

demanding the joint consideration of specialists from various fields of science. Others are of narrowed scope but of such character or magnitude that the combined efforts of many workers are essential for their solution. The National Research Council has organized many cooperative investigations. Such organized campaigns against the unknown are few and far between in our country, for but few men have had the vision to give them financial support. Thus, we need to find great funds which wisely directed can be used to support and stimulate the work of the many indigent investigators, the many men in our universities, the great research institutions, and to organize definite campaigns of cooperative research among them.

The third type of pure science research that requires much more liberal support is the special institution. The recent appeal of the Smithsonian Institution for additional endowment to enable it to support a larger staff, so that it may properly compass that fraction of the field of science which has been its province, should have the support of every citizen. The Smithsonian Institution has been peculiarly the architect of scientific investigation in our country. Much of the work we have in progress today has been inspired from this great pioneer of all American research.

It is unfortunately true that we can claim no such rank in pure science research as that which we enjoy in the field of industrial research. Instead of leading all other countries in the advancement of fundamental scientific knowledge the United States occupies a position far in the rear of the majority of European nations. A list of the awards of the Nobel prizes to men of various nationalities reveals the small proportion of first minds that we support. Other tests lead to the same conclusion, namely, that the number of first-rank investigators developed in the United States is far below what our population, education, and wealth would lead one to expect.

The difficulty we experience in securing a place in science beside the nations of Europe can hardly be due to a lack of men of innate ability, judging from the leading part already played by the United States in finance, in architecture, and in applied science. It results partly from the fact that American civilization is only beginning to emerge from the pioneering stage, and partly from the financial and other inducements which so often lead talented men reluctantly to accept well-paid industrial positions instead of poorly-paid academic and research posts.

The far-sighted leaders of industry fully recognize the dependance of their progress upon advances in science, and emphasize their belief that fundamental research should be much more greatly aided.

Dr. J. J. Carty said in his presidential address to the American Institute of Electrical Engineers ten years ago:

"By every means in our power, therefore, let us show our appreciation of pure science, and let us forward the work of the pure scientists, for they are the advance guard of civilization. They point the way which we must follow. Let us arouse the people of our country to the wonderful possibilities of scientific discovery and to the responsibility to support it which rests upon them, and I am sure they will respond generously and effectively."

But the response has not yet come.

After many years of experience in industrial research he echoes the words of Tyndall spoken in New York in 1873:

"It would be a great thing for this land of incalculable destinies to supplement its achievements in the industrial arts by those higher investigations from which our mastery over Nature and over industrial art itself has been derived."

We have prided ourselves on our practicality as a nation. Would it not be a practical thing to do to give adequate organized financial support to pure science? And if by chance we develop a little contribution to abstract learning and knowledge, our nation will be immensely greater for it.

EDITOR'S NOTE: It will be of particular interest to agricultural engineers, in connection with the foregoing address on pure science research, to know that through the efforts of the National Academy of Sciences there has been established a National Research Endowment for the purpose of obtaining immediate support and encouragement for pure science research in the United States. It is hoped that an annual income of at least \$2,000,000 can be secured to establish national research professorships and in other ways to cooperate with universities and other institutions through-

out the country which are prepared to do their full share in the encouragement and support of fundamental research in the mathematical, physical, and biological sciences. The National Academy of Sciences has created a special board of trustees for the National Research Endowment, of which Herbert Hoover will be chairman. The board includes also the following members: Albert A. Michaelson, president of the National Academy of Sciences; Gano Dunn, chairman of the National Research Council; Vernon Kellogg, permanent secretary of the National Research Council; Elihu Root; Andrew W. Mellon; Charles E. Hughes; John W. Davis; Col. Edward M. House; Julius Rosenwald; Cameron Forbes; Felix Warburg; Henry S. Pritchett; Dr. Robert A. Millikan, foreign secretary of the National Academy of Sciences; Dr. John C. Merriam, president of the Carnegie Institution of Washington;

Owen D. Young; Henry M. Robinson; Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research; Dr. John J. Carty, vice-president of the American Telephone and Telegraph Company; Dr. William H. Welch, director of the School of Hygiene and Public Health of John Hopkins University; Dr. James H. Breasted, director of the Oriental Institute of the University of Chicago; Prof. L. R. Jones, of the University of Wisconsin; Prof. A. B. Lamb, Harvard University; Prof. Oswald Veblen, Princeton University; Dr. Thomas H. Morgan, Columbia University; and Dr. George E. Hale, Mount Wilson Observatory.

This movement is of particular significance to agricultural engineers, and they should see to it that their interests are properly represented as this movement develops.

## A Significant Statement on Pure Science Research

**F**OLLOWING a conference late in January of prominent public men and leading scientists who have consented to serve as the board of trustees of the National Research Endowment established by the National Academy of Sciences to obtain immediate support and encouragement for pure science research in the United States, the following declaration was made public, which is of particular interest and significance to agricultural engineers:

"The trustees of the National Research Endowment, recognizing that human progress depends in large degree upon research in pure science, declare their conviction:

"(1) That the United States, which already occupies a leading position in industrial research, should rank with the most enlightened nations in the advancement of pure science.

"(2) That it is wiser to make large expenditures for scientific research, thus advancing civilization, improving human welfare, conserving health, and saving countless useful lives, than to tolerate suffering and then endeavor to alleviate it at still greater cost.

"(3) That research in all branches of the mathematical, physical, and biological sciences should be encouraged, because of the intellectual and spiritual value of adding to knowledge and because the greatest advances in science and in industry often result from apparently useless abstract discoveries.

"(4) That scientists exceptionally qualified to widen fundamental knowledge through research are of such value to the nation that every effort should be made to facilitate their work.

"(5) That the overcrowding of educational institutions, and the consequent excessive demands for teaching and administration, have further reduced the limited opportunities

for research previously enjoyed by the members of their faculties.

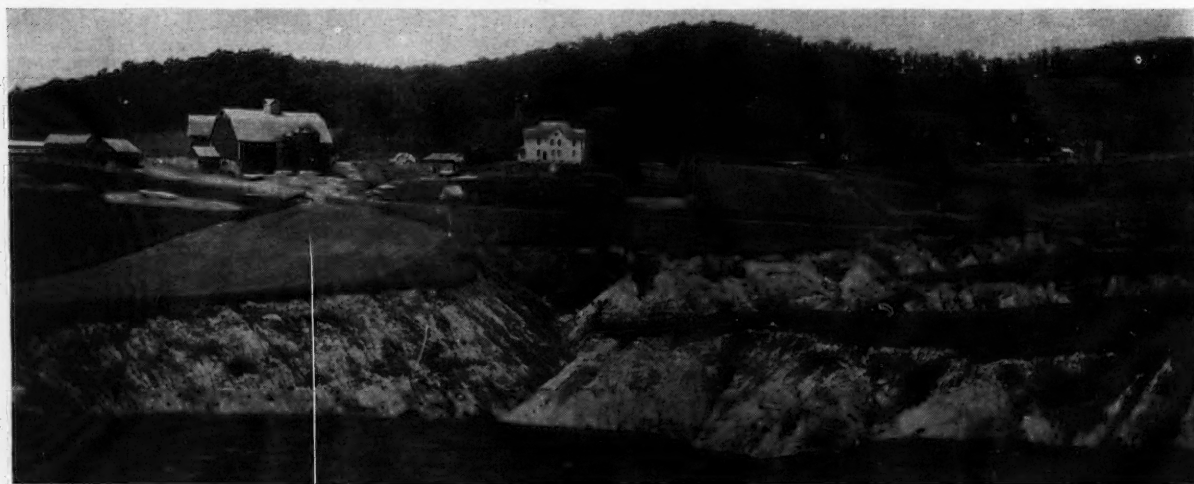
"(6) That the funds now available for the support of research in pure science in the United States are far below what our population, education and material resources demand.

"(7) That the National Academy of Sciences, created by congressional charter the scientific adviser of the government, and composed of leading investigators in the closely interlocked and mutually dependent mathematical, physical and biological sciences, is peculiarly qualified to evaluate the needs of pure science in America, to stimulate its progress, and to insure the widest use of funds provided for research.

"In view of these considerations, the trustees of the National Research Endowment, established by the National Academy of Sciences, propose immediately to secure adequate funds for the encouragement of research in pure science."

## Book Review

"Problems and Projects in Industrial Arts," by Kenneth R. Lavoy, instructor in industrial arts, New Rochelle, New York, is a new book for the teacher of general shop work. It contains suggestions and problems for information and work in various lines of industry which are typical of our modern specialized workaday world. It is planned especially for shops having only the average manual training equipment. It offers an opportunity for the expression of individual ideas in design and the development of originality and initiative in planning and executing the various projects. It contains chapters covering the following subjects: Bench woodworking; electricity, radio; concrete; sheet metal, and advanced woodworking. The book is published by the Manual Arts Press, Peoria, Illinois, and the price is \$1.25.



AN EXAMPLE OF WASTE RESULTING FROM SOIL EROSION

This picture shows what has happened to a valuable farm in western Wisconsin as a result of soil erosion. Such examples as these are all too common and unless checked every rain makes the ruin of valuable farm lands still greater. It took about twelve years for this gully to work back from its origin, a distance of about one-half mile. The gully is over 100 feet deep and in places over 1000 feet wide. As a result a \$50,000.00 farm has been sacrificed and made a public eye-sore. To save what is left of the farm it will be necessary to install flumes at places where the surface run-off collects and carry the surplus water through a flume down to the bottom of the gully so as to prevent further waste from erosion. This is an agricultural engineering problem, and it should be said that agricultural engineers are making a great deal of progress in encouraging farmers to use engineering methods to prevent the tremendous waste going on each year. (Photo by courtesy of Gottlieb Muehlisen)



# News of the Annual Meeting

Tahoe Tavern — Lake Tahoe — California

Meeting Dates, June 23-26, 1926

Inspection Trips, June 28—July 1, 1926

## Pacific Coast Section Announces Plans for 1926 Meeting at Lake Tahoe

By H. A. Wadsworth

Chairman, Committee on Arrangements

**P**LANs for the accommodations and entertainment of members of the American Society of Agricultural Engineers attending the 20th annual meeting at Lake Tahoe, California, June 23-26, are well under way although six feet of Sierra Nevada snow still covers the grounds of Tahoe Tavern at this writing (early in March). Travelers of all sorts are being provided for. The Tavern itself will be headquarters and superior hotel accommodations are available for those who desire them. Public camp grounds are provided by the U. S. Forest Service and the California Fish and Game Commission for those who walk, come horseback, or motor, and for those who may be satisfied with accommodations of their own providing.

But one word of warning is necessary. Those who come by air should use hydroplanes since Lake Tahoe provides adequate landing facilities for this form of aircraft. The rugged topography of the region prohibits the use of wheeled landing gears.

**Tavern Guests.** For want of other information it is being assumed that the majority of visitors will come by the special train leaving Chicago at 8:00 p. m., June 20. This train will be met at Ogden or Reno by representatives of the Committee on Arrangements and the Tahoe Tavern management. Details of registration and room assignment may be completed enroute. Preliminary information from prospective visitors with regard to accommodations required at the Tavern would facilitate this work. Such information should be sent to the writer at Davis, California.

The following special rates, including both meals and lodging, have been provided by the Tavern for convention visitors: Two persons in room without bath, \$6.00 per day each; one person in room without bath, \$6.50 per day; two persons in room with bath, \$7.00 per day each; one person in room with bath, \$7.50 per day.

Many of the Tavern rooms are provided with connecting baths. Arranging congenial parties of four for use of these small suites will extend the facilities of the private baths.

Children occupying cots in rooms with adults will be lodged free. Adjustment with regard to board will be made in each case. In general, board alone at the Tavern, under the conventional schedule, is charged for at the rate of \$4.00 per day.

Occasional meals to campers will be charged for by the Tavern management in accordance with the following schedule: Breakfast, \$1.00; lunch, \$1.50; dinner, \$1.50.

**Automobile Campers.** The U. S. Forest Service maintains a public camp on the shore of Lake Tahoe one and one-half miles south of the Tavern. This camp is piped with mountain water and equipped with adequate sanitary facilities. Bath houses are provided. There is no charge for camping privileges on these grounds. Visitors who contemplate using the facilities of the Forest Service camp site must provide their own equipment. A small grocery is in operation on the public camp ground.

A furnished bungalow camp is operated at McKinney's resort seven miles south of Tahoe Tavern.

**Garage Facilities.** A garage and repair shop is operated by the Tahoe Company at the Tavern. Free automobile storage is granted to motorists lodged at the Tavern. Adequate equipment and help is available in the garage for repair work. This service is not restricted to Tavern guests.

**Meeting Places.** Business meetings of the Society and large section meetings will be held in the Pavilion. This building is in the Tavern group but is removed from the main buildings. Facilities are available for luncheon and dinner meetings of large groups on the verandas joining the main dining room. Smaller groups can be accommodated by special tables in the large dining room.



(Left) General view of the lake front of Tahoe Tavern, Lake Tahoe, California. (Right) Mountains, virgin forests and crystal blue waters conspire to create the magnificence of Lake Tahoe. (Photos by courtesy of Tahoe Tavern)

**Amusements.** Ample facilities for amusement are available at Tahoe Tavern and its vicinity during the hours not devoted to convention business.

Two golf courses are close at hand. One of these is operated by the Tavern company. A grounds fee of \$1.00 is charged on this course. Golf clubs may be rented at the Tavern in case personal clubs are forgotten or a convert is made. Balls may be bought at the Tavern. The Brockway course, which is within easy access of the Tavern, is one of the most famous in the West. During the season of 1925, a greens fee of \$2.00 was charged on this course. Since that time the Brockway course has changed hands and no information as to the present fee is obtainable.

Tennis courts are maintained by the Tavern. There is no charge for the use of these courts by guests. Rackets and balls may be obtained at the Tavern.

In addition to the adequate facilities for swimming offered by Lake Tahoe, the Tavern company operates a steam heated pool. No charge is made for the use of this pool. Suits are rented for a nominal fee.

A stable of trail-broken saddle horses is available for the use of Tavern guests. Interesting mountain trails which are a constant invitation to natural-born explorers radiate from Tahoe Tavern. Animals from the saddle stable may be rented on an hourly or daily rate.

Trout are to be found in the mountain streams and in the Lake. Tackle may be secured at the Tavern. Boats for use in deep water fishing are available for rent. Professional fisherman guides may be engaged by those who distrust their own skill and judgement. Non-residents pay a fee of \$3.00 for the privilege of fishing in California. This fee is not returnable in case of poor luck.

**Entertainment.** While a fixed schedule of entertainment for members during extra-session hours has been avoided the arrangements committee and the hostess at the Tavern will always be available to aid in the organization of group activity. It has been thought that the diversification of facilities in the Tahoe region will allow members to secure greater enjoyment from the few hours not devoted to convention business than could be obtained by an arbitrary schedule. This policy has also been adhered to in planning for the entertainment of the women at the meeting.

There will be no bugle calls. Proposed trips will be posted on the bulletin board and announced at the evening campfire. Those wishing to go will be welcome. Those wishing to rest or amuse themselves will not be molested. No offense will be given if the boat rides and automobile trips are not patronized.

The little organized entertainment which is provided is free to all members and friends. The "Tahoe," a twin screw, steel hulled excursion boat with a capacity of about two hundred fifty has been chartered for the afternoon of June 24. This boat will make a circuit of the lake returning to the Tavern in time for dinner.

On the morning of June 25, (which, by the way, is the heavy business day of the convention), an automobile caravan for women will leave the Tavern for an all day trip to Echo Lake. This lake which is one of the scenic spots of the high

Sierras lies on the western side of the summit, about 15 miles from the Tavern. Mechanics and firemen will be conscripted from the student membership. Lunches will be provided by the Tavern.

A barbecue on the evening of Saturday, June 26, closes the activities at Lake Tahoe. A place has been selected on the shore of the lake where the close of the 1926 convention can be celebrated in fitting style. Hardy ones tramp from the Tavern at the close of the last business session; those fatigued by convention activities go by automobile or boat. The Tavern will furnish the barbecue as the regular evening meal.

The evenings have purposely been kept free from organized activity. Informal entertainment or no entertainment at all around a huge bonfire at Lake Tahoe cannot be excelled by any man-made program. Ample opportunity will be available however, for special features of song, story or drama devised by local sections or student organizations. Such organizations will be held responsible for evening entertainment. Three prizes for meritorious performance in these fields of endeavor have been provided. The details of these prizes cannot be divulged. They will, however, be commensurate with the quality of the entertainment furnished.

**Tentative Entertainment Program.** The tentative schedule of session and extra-session activities is summarized below:

WOMEN				
	June 23	June 24	June 25	June 26
Morning	Reception and registration	Open	Auto ride to Echo Lake with picnic lunch	Open
Afternoon	Open	Boat ride around lake		Open
Evening	Bonfire	Bonfire	Banquet	Barbecue
MEMBERS				
	June 23	June 24	June 25	June 26
Morning	Reception, registration, and special conferences	Convention program	Convention program	Convention program
Afternoon	Open	Boat ride around lake	Convention program	Convention program
Evening	Division meetings, Bonfire	Business meeting, Bonfire	Banquet	Barbecue

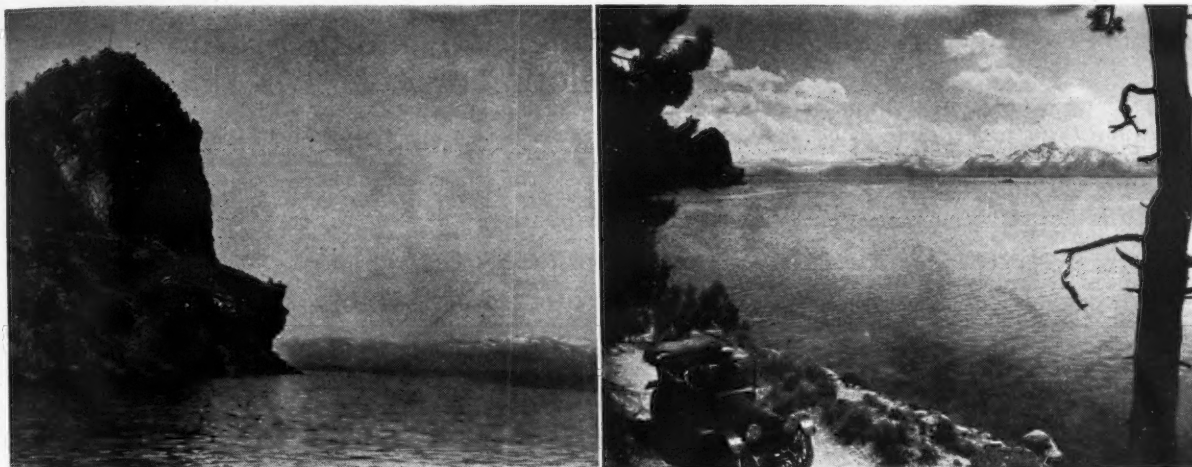
Plans are made for the accommodation of all who can attend. An opportunity for a week in the high Sierras with the grandeur of the Tahoe mountains, and the stimulation of such a convention as added features is not to be disregarded. Except for a certain minimum, the trip can cost as much or as little as an individual cares to make it. But come.

Additional information can be secured by a letter addressed to L. J. Fletcher, Davis, California.



Views of Tahoe public camp, operated by the U. S. Forest Service, provides camping facilities for motorists. The camp is on the Rim Drive, one and one-half miles south of Tahoe Tavern. Screens of virgin timber provide seclusion for camping motorists in Tahoe Camp. (Photo by U. S. Forest Service)





Views of Rim Drive at Lake Tahoe. Cave Rock on Rim Drive and "Lady of the Lake" at left (Find the "lady.") Glenbrook Road at right

## General Plan of A. S. A. E. Twentieth Annual Meeting

THE general plan of the 1926 annual meeting of the American Society of Agricultural Engineers not only provides for general sessions of the entire convention and separate meetings of the technical divisions of the Society, but adequate provision is also made for group conferences, committee meeting, etc., throughout the four days of the meeting from June 23 to 26.

The meeting will open Wednesday morning, June 23, with the arrival of the special train from Chicago at 7:00 A.M. Promptly on arrival members and their families and others attending the meeting will be registered. The entire forenoon of that day will be devoted to committee meetings, a meeting of leaders in charge of state rural electrification projects, and a conference of extension men engaged in the distribution of surplus war explosives.

The afternoon session of that day will be a general session and will be opened at one o'clock by the annual address of the president, F. A. Wirt. This will be followed by two or three of the principal addresses to be presented at the meeting, and the session will adjourn at 4:30 P.M. Dinner conferences of various groups and a special meeting of the heads of agricultural engineering divisions of state universities and colleges will be held from 6:00 to 8:00 P.M. Following this evening sessions of the Farm Structures and the Rural Electric Divisions will be held, these two programs to be presented simultaneously.

The morning session of Thursday, June 24, will be a general session devoted to technical papers of interest to all agricultural engineers. The session will close at twelve o'clock noon, and the afternoon will be devoted to a steamboat trip around the lake, stopping at points of interest. Or those who prefer may resort to golf, fishing, mountain climbing, etc.

Dinner conferences will be the order of the day from 6:00 to 8:00 P.M. on Thursday, which will include a group conference of agricultural engineers engaged in extension work and another group conference of those interested in soil dynamics.

The evening session will be devoted to the annual business meeting of the Society, including the report of the secretary-treasurer, reports of A.S.A.E. representatives to other organizations, special committees, standing committees, and general business.

The morning session of Friday, June 25, will be a general session devoted largely to the presentation and discussion of papers on important irrigation and land settlement problems. The Friday afternoon session will feature meetings of the Farm Power and Machinery and the Reclamation Divisions. The annual banquet will take place on Friday evening.

The morning session of Saturday, June 26, will be devoted to a program of the College Division featuring resident teach-

ing and research. The afternoon session will also be in charge of the College Division and will be devoted to extension work in agricultural engineering.

Saturday evening and Sunday will be devoted to social activities, including trips through the mountains, along the shore, or on the lake. A particular feature of Saturday evening will be a barbecue dinner on the shores of Lake Tahoe.

The annual meeting sessions will officially close at four o'clock Saturday afternoon. For the benefit of those attending the meeting, inspection trips of particular interest to agricultural engineers have been arranged and will take place following the meeting.

On Monday morning, June 28, those who will take the inspection trips will leave Tahoe Tavern for a day's visit of the famous hydroelectric developments of the Pacific Gas and Electric Company in the Sierra Nevadas. Lake Spaulding, a large artificial lake with a storage capacity of 74,488 acre-feet, will be reached by train about 9:30 a.m., and from there to Sacramento travel will be by automobile, the route of travel being through some of the old placer mining areas, into three of the hydroelectric plants, and finally through the largest foothill orchard section of the state, where the water from Lake Spaulding and the other twenty lakes and reservoirs of the Spaulding-Drum storage system, after passing through five separate power houses with a combined generating capacity of 90,147 horsepower, is finally consumed in the irrigation of about 30,000 acres of orchard lands.

June 29 will be devoted to an all-day trip via auto busses through the northern Sacramento Valley. This trip will include a large corporation farm where extensive use is made of power operated machinery, rice fields, the Durham state land colony, and typical grain and fruit sections of this part of the state. Arrangements with farmers along the route of the inspection trip are being made so that certain interesting types of farm machine equipment will be in operation when the party arrives.

The third inspection trip on June 30 will be devoted to an all-day journey through the Delta district of the Sacramento and San Joaquin Rivers. This section is of particular interest to agricultural engineers because of the large amount of reclamation work and unique character of the agriculture of the Delta. Travel will be by automobile and river steamer from Sacramento to Stockton, with frequent stops so that members may go out onto the reclaimed areas.

The fourth inspection trip, on July 1, will consist of a trip through the Modesto and Turlock irrigation districts. Here are found many examples of diversified farming under irrigation as well as a very wide use of electrical energy in all types of farming operations as well as in the farm homes. This trip will close the organized inspection tours.

## A. S. A. E. Annual Meeting Program to Feature New Developments

THE most outstanding feature of the program of the 20th annual meeting of the American Society of Agricultural Engineers, to be held at Lake Tahoe, California, June 23-26, 1926, is that the papers and reports, not only at the general sessions but at the sessions of the several technical divisions as well, will be confined practically entirely to presenting the results of new engineering developments in the various fields of the Society's activities; in fact, the Meetings Committee in negotiating with speakers invited to contribute to the program, have made it clear that it is expected that papers and reports will, for the most part, report new work. This effort gives assurance, therefore, that the meeting will be one of unusual value and inspiration to agricultural engineers and others who have a particular interest in this branch of engineering.

The selection of topics of timely interest and importance, as well as speakers most capable of handling them, has been under way by the Meetings Committee for several months, and the result of these efforts gives promise already of a program that no agricultural engineer can afford to miss. The various industries allied to the agricultural-engineering field are urged to send representatives, particularly from their engineering and research departments, to attend this meeting. In view of the variety of subjects that will be discussed, practically all branches of the engineering profession will find something of particular interest in this program, and a special invitation is extended to members of other engineering societies to attend this meeting.

Following are some of the principal papers to be presented at the meeting, arrangements for which have been completed. Authorities on the same subject will present prepared discussions to supplement each paper, and plan being to have the discussion cover all the more important phases of a particular problem:

J. B. Davidson, professor of agricultural engineering of Iowa State College, and temporarily serving as senior agricultural engineer of the U. S. Department of Agriculture and director of the farm equipment research survey which is being conducted by the Department, will present a paper on farm equipment research based on the extensive survey he has made. Prof. Davidson will have a message of great importance and significance to research workers and engineers in this field, to the farm-equipment industry, and to the users of farm equipment.

The use of earth in building construction is a subject which is creating considerable interest in a number of sections of the country, and one which deserves careful and impartial analysis from the standpoint of cost of construction and durability. J. D. Long, of the agricultural engineering division of the University of California, has been making a thorough study of the use of rammed earth and adobe blocks as building materials and his paper on that subject will be one of the principal contributions to the program.

"Progressive Construction of Farm Structures with Special Reference to Bullings on the California State Land Colonies (California)" is the title of a paper to be presented by Max E. Cook, farmstead engineer of the California Redwood Association. Mr. Cook has had extensive experience in this field and is unquestionably the outstanding authority on the subject in this country.

The subject of rural electrification will be given special attention at the meeting of three of the papers that have been arranged for, at this writing, include one on the subject of rural electric rates by L. S. Wing, an engineer in the employ of the California Farm Bureau Federation, whose work along this line is a distinct contribution to the solution of this perplexing problem. The subject of rural line characteristics, including such items as load and diversity factor, will be presented in a paper prepared by Franklin J. Zink, assistant engineer with the Iowa Rural Community for Electrical Development at Garner. This is a subject of great interest to

all concerned with rural electrification and a number of discussions of this paper will be secured from qualified men.

"The Farmer as an Engineer" is a subject of a paper being prepared by Arthur Huntington, chairman of the Rural Electric Division of the Society and public relations engineer, of the Iowa Railway & Light Corporation. This paper will consist of an analysis of farming from the standpoint of the manufacturer.

One of the pressing problems demanding the attention of agricultural engineers at the present time, particularly as it affects communities where the combined harvester-thresher is used, is the bulk versus the sack method of handling threshed grain from the "combine." Considerable progress in the solution of this problem has been made in California, and the subject will be handled at the A.S.A.E. annual meeting in a comprehensive paper to be presented by Prof. E. J. Stirniman, of the agricultural engineering division of the University of California.

The contribution of the Reclamation Division of the Society will be one of the outstanding features of the annual meeting program. One of the principal speakers to feature this part of the program will be presented by J. V. Mendenhall, president, California Approved Land Settlement Association, which will deal with selection and financing of settlers on reclaimed land and ways and means of aiding the settler in establishing himself. The March 1926 issue of AGRICULTURAL ENGINEERING, the monthly A.S.A.E. journal, contained a brief article by F. J. Velhmeyer, associate irrigation engineer of the University of California, on the water requirements of agricultural crops which upsets much of the generally accepted knowledge on the relation of soil moisture to plant growth. Prof. Velhmeyer will develop this and similar subjects in considerable detail in one of the principal papers to be presented at the Lake Tahoe meeting. "The Soil and the Engineer" is the subject of a general symposium to be led by Major O. V. P. Stout, chairman of the Reclamation Division. A number of well-qualified engineers of wide and varied experience have been requested to contribute to this portion of the program. Other papers to be presented in connection with the reclamation program, but for which definite arrangements had not been completed at this writing, include specific irrigation problems, modern terracing, and methods of removing stumps by blasting, burning, and pulling.

In the past few years agricultural engineers have been giving considerable attention to the storage of apples, potatoes, and similar crops. These studies have been largely of a research nature and the result is a real contribution to scientific knowledge on this subject. The latest and most modern ideas on fruit and vegetable storage will be presented in a paper by W. G. Kaiser, agricultural engineer and assistant manager of the cement products bureau of the Portland Cement Association.

The entomologists and crop experts, after a preliminary tussle with the corn borer which is creating havoc in a well-defined area of the northeastern portion of the United States and the Province of Ontario in Canada, threw up their hands and called in the agricultural engineers. To date the most important advance that has been made to check the ravages of the corn borer, and which seems destined for complete success, has been made by agricultural engineers. The department of agricultural engineering at Ohio State University has taken the leading role in this effort, and C. O. Reed, professor of agricultural engineering at that institution, will present a paper at the California meeting, outlining what the agricultural engineers in general, and at Ohio State University in particular, have accomplished in the direction of effectively checking this most serious menace to the production of corn in America.

For several years the division of agricultural engineering of the U. S. Department of Agriculture has been making a very thorough study of power in relation to the conditions



and needs of the agricultural industry. C. D. Kinsman, senior agricultural engineer of the Department, has been directing these studies and the results of his work are recognized as of the most far-reaching importance to agriculture. His paper to be presented at the A.S.A.E. annual meeting will discuss the relation of power to farm production and income.

E. V. Collins, of the agricultural engineering section of the Iowa Agricultural Experiment Station, will present a paper on the subject of feed grinding based on some extensive research work which he has conducted at that station.

The adaptation of farm machines to extreme hillside conditions presents a real problem in agricultural engineering in many sections of the country. This problem has come in for special attention in the state of Washington, particularly in connection with the production of wheat in the Palouse country. In addition to a paper to be presented on this subject by Prof. C. C. Johnson, of the State College of Washington, a number of agricultural engineers in other parts of the country faced with similar problems will present prepared discussions dealing with different angles of the subject with which they are especially concerned.

Carrying on the splendid progress made at the National Farm Homes Conference held under the auspices of the A.S.A.E. Division of Farm Structures at Chicago in February, to arouse more widespread interest in and attention to the problem of

better farm homes in America, a paper, entitled "Farm House Arrangement as Developed by Research in Home Management," will be presented by Miss Greta Gray, research specialist in home management at the University of Nebraska. Miss Gray was trained as an architect and her paper on this subject will be one of the outstanding contributions to the advancement of the better farm homes movement.

In addition to the foregoing, there will be nearly as many more equally outstanding addresses, papers, and reports, for which arrangements are now being made. Aside from these there will be many committee meetings, group conferences, etc., which will make attendance at this meeting eminently worth while to all who are interested in this field of engineering. A special land clearing conference has been arranged for the extension men engaged in the distribution of surplus war explosives. Six subjects of wide interest have been assigned to as many men in the various parts of the United States.

The meeting will furnish opportunity for making personal contacts and acquaintances with leading agricultural engineers, the benefits of which are invaluable. Also the inspiration and new vision one gains from attendance at a meeting of this kind is worth many times the expense involved, and, moreover, is something that cannot be gotten in any other way.

Following the annual meeting of the A.S.A.E. at Lake Tahoe, California, June 23 to 26, four inspection trips of special interest to agricultural engineers have been arranged for the benefit of those attending the meeting. They include a visit to the hydroelectric developments of the Pacific Gas and Electric Company in the Sierra Nevadas; a trip through the northern Sacramento Valley, including the Durham state land colony; an all-day journey through the Delta district of the Sacramento and San Joaquin Rivers, and a trip through the Modesto and Turlock irrigation districts. A description of the second of the four inspection tours follows.

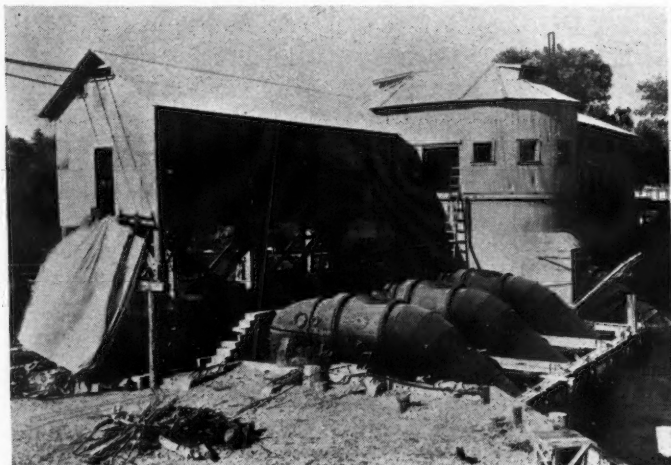
## The Sacramento Valley Inspection Trip

**T**HIS is a description of the second of the four inspection tours following the 20th annual meeting of the American Society of Agricultural Engineers at Lake Tahoe, California, June 23-26, 1926.

This tour is planned especially to attract those interested in the agricultural engineering problems of western land reclamation and land colonization. In addition it will afford those taking the trip an excellent opportunity to obtain a

bird's eye view of the varied agricultural developments of the Sacramento Valley.

Leaving Sacramento early on the morning of June 29, the present plans are for the party to proceed by automobile up the west levee of the Sacramento River, the first stop being made at the Sacramento Weir. This weir is a concrete structure 2000 feet in length capable of handling a maximum flow of 150,000 second-feet, and is used as a by-pass from the



(Left) Battery of wood screw pumps operating under low heads in pumping water from the Sacramento River for irrigation

(Right) A "checker" preparing land for the irrigation of rice in the Sacramento Valley of California

"The agricultural engineer who does not attend the annual meeting of the A.S.A.E. at Lake Tahoe, California, next June, will miss one of the big, outstanding events of his lifetime," says F. A. Wirt, president of the American Society of Agricultural Engineers.

Considerable space in this issue is devoted to the plans and arrangements that are being made for this meeting and the four inspection trips that follow it. These descriptions serve to indicate the importance and significance of the event. The agricultural engineer should not look upon attendance at this meeting as an expense so much as an investment in his future advancement in his profession and also in greater efficiency in his work.

Sacramento River into the Yolo Basin when the river reaches a dangerous flood stage.

The second stop will be made at the headquarters of the Sutter Basin Company. This development represents a typical reclamation project involving the problems of both irrigation and drainage in which overflow lands have been fully reclaimed by private capital. Interesting agricultural engineering features in this development includes the installation and operation of large capacity centrifugal pumps, application of water by surface and sub-irrigation methods, and the utilization of agricultural machinery in successful diversified farming on a large scale.

Leaving the Sutter Basin the proposed route leads north through the farming section under irrigation from the canal system of the Sutter Butte Canal Company, and into the center of the principle rice growing area of the Sacramento Valley. Here a brief stop and explanation will be made of the engineering and agricultural problems involved in rice production, especial attention being given to the machinery used in the preparation of land for irrigation and in the seeding and harvesting of the crop.

The noon stop will be made at the community picnic grounds of the Durham State Land Colony. This project covers the complete development and colonization of 5000

acres of agricultural land, upon which eighty-five homesteads have been established through financial aid secured from the state. Max E. Cook, farmstead engineer on this project during its development, will point out and discuss the problems involved in planning the farmstead layouts, construction of farm dwellings, and farm structures.

Crossing the Sacramento River at Hamilton City, the return trip will be made down the west side of the Sacramento Valley, with brief stops at the Mills Orchard Company, an extensive private enterprise devoted principally to production of citrus fruits, and at the University of California temporary rice experiment station where investigations are under way dealing with the various irrigation problems involved in the production of rice. Time permitting, a final stop will be made at the branch of the college of agriculture at Davis, where a short tour of the experimental fields and grounds will be made. By this time, indications are that construction will have been started on the new \$135,000 agricultural engineering and irrigation building.

Make your plans now to attend the 1926 convention of the American Society of Agricultural Engineers, and in making these plans do not overlook the inspection trips. If you are interested in agricultural engineering, they will be eminently worth while.



A GROUP OF PROMINENT MEMBERS OF THE AGRICULTURAL ENGINEERING PROFESSION  
This picture was taken during a meeting of the Advisory Committee of the College Division of the American Society of Agricultural Engineers at Washington, March 1, 2, and 3, 1926, and includes members of the Committee and agricultural engineers connected with the U. S. Department of Agriculture. They are: (Back row, left to right) R. B. Gray, R. U. Blasingame, R. W. Trullinger, J. B. Davidson, William Boss, L. J. Fletcher, C. D. Kinsman. (Front row, left to right) H. H. Barrows, S. H. McCrory, L. A. Jones, M. A. R. Kelley, C. E. Seitz, H. H. Musselman, and M. C. Betts



## A. S. A. E. and Allied Activities

### Student Members Winners in Essay Contest

**S**TUDENT members of the American Society of Agricultural Engineers recently carried off the three prizes offered in an essay contest conducted by the J. I. Case Threshing Machine Company. The subject of the contest was "The Advantages of Tractor Farming," and was open only to junior and senior agricultural-engineering students or agricultural students majoring in agricultural engineering in any college or university in the United States or Canada. Entries were received from all sections of the country clearly indicating the keen interest the students are taking in power farming.

The winner of the first prize was W. C. Wood, a student and member of the A.S.A.E. student branch at the University of Saskatchewan. Mr. Wood has spent all his life on a farm, the last thirteen years being on the prairies of Saskatchewan. He has operated tractors since 1914 and during that time has owned three. He has done almost every kind of job with his tractor, including a great deal of breaking or raw prairie and stubble plowing.

The second prize was awarded to Edwin M. Cupp, an agricultural-engineering student and member of the student branch of A.S.A.E. at Ohio State University. His paper also was a very clear and forceful presentation of the subject and indicated that he clearly understood the subject in hand and was able to write convincingly on it.

The third prize went to Fred A. Lyman, a junior in agricultural engineering and a member of the student branch of the Society at Iowa State College. His manuscript entitled "Power or Labor?" painted a vivid picture of the great economies and advantages of modern tractor farming.

The sponsors of the contest are very high in their praise of the excellent work of the students who submitted essays. Considerable difficulty was experienced in picking the winners due to the excellence of the manuscripts submitted. If any conclusion were to be drawn from the contest, on the basis of the opinions expressed by the students who submitted manuscripts, it would be that the coming generation, the men who will be the leaders in agriculture and agricultural engineering tomorrow, are even more convinced than the present generation of the necessity of mechanical power in agriculture.

### Radio Lectures on Agricultural Engineering

**T**HE members of the agricultural engineering department of the college of agriculture at the University of Missouri will give a series of lectures over Radio Station KFRU, beginning April 2 and continuing each Friday evening until May 7. The series is entitled "The Engineering Side of Missouri Farming." These lectures will be put on the air at 7:15 P.M., on a wave length of 499 meters.

On April 2, Prof. A. J. McAdams will discuss the subject "Modern Methods of Clearing Land."

On April 9, Prof. J. C. Wooley, head of the department of agricultural engineering, will discuss the question of planning the farm buildings.

On April 16, Prof. M. M. Jones will discuss the question of the selection of machinery.

The April 23rd lecture will be given by Prof. A. J. McAdams on the subject of draining Missouri lands to make them more productive.

On April 30, Prof. J. C. Wooley will discuss the question of water supply and sewage disposal on the farm.

The series will close on May 7 with a lecture by Prof. Jones on the selection of a lighting system for the farm.

### Rural Electrification Conference

**A** JOINT conference on rural electrification has been called by the Committee on the Relation of Electricity to Agriculture and the Agricultural Publishers Association and will be held at the Hotel Sherman, Chicago, May 12 and 13. The sessions are open and anyone interested in the subject is invited to attend. A number of members of the American Society of Agricultural Engineers, including J. B. Davidson, E. A. Stewart, F. W. Duffee, E. C. Easter, and F. D. Paine, will address the conference.

The nature of the conference is indicated by the general topics which will feature the four half-day sessions and include the following: "Will Electrification Make Farm Life Better?" "Will Electrification Make Farming More Profitable?" "How Can a Farmer Get Electric Light and Power Service?" and "What Equipment Problems Will Electrification Bring?"

Both organizations sponsoring this conference emphasize



A.S.A.E. student member winners in Case prize essay contest. Left to right: W. C. Wood, University of Saskatchewan; Edwin M. Cupp, Ohio State University; Fred A. Lyman, Iowa State College

the fact that its purpose is not a campaign for the extension of power lines or individual lighting plants on farms; it is rather an unbiased inquiry on the question of whether or not electrical power can profitably be used in modern farming.

### South Carolina's Plan for Rural Electrification

**A**S A RESULT of a conference called recently at Greenville, South Carolina, by President E. W. Sikes, of the Clemson Agricultural College, the South Carolina Committee on the Relation of Electricity to Agriculture was formed by representatives of the electric utility companies, farmers organizations, prominent farmers, and members of the faculty of Clemson Agricultural College. H. W. Barre, director of the state agricultural experiment station, was elected chairman of the committee, and J. T. McAlister (Mem. A.S.A.E.), in charge of agricultural engineering work at the College, was elected secretary.

There is a keen interest in rural electrification in South Carolina, due to the fact that the state has a number of transmission lines over the Piedmont region and the Southern Public Utilities Company has many rural customers. Plans are now being arranged to develop the rural electrification work and it is probable that some of the rural lines already established will be taken over as a field laboratory.

### New A.S.A.E. Members

**Herbert W. Bonnell**, sales manager, Milwaukee Air Power Pump Co., Milwaukee, Wis.

**W. C. Brown**, commercial engineer, National Lamp Works of General Electric Company, Nela Park, Cleveland, Ohio.

**W. W. Cameron**, experimental engineer, La Crosse Plow Company, La Crosse, Wisconsin.

**Ralph M. Gray**, engineer, Table Mountain Irrigation District and Table Mountain Ranch, Oroville, California.

**H. J. Hirschheimer**, president and general manager, La Crosse Plow Company, La Crosse, Wisconsin.

**J. H. Y. Kidd**, district commercial manager, Central Hudson Gas & Electric Co., Poughkeepsie, New York.

**G. C. D. Lenth**, secretary and consulting engineer, Clay Products Association, Chicago, Illinois.

**Ruby M. Loper**, assistant state extension agent, University of Nebraska, Lincoln, Nebraska.

**Carl R. Olson**, assistant county surveyor and assistant city engineer, Urbana, Illinois.

**Lorne S. Robertson**, sales manager for New York City, Loudon Machinery Company, Yonkers, New York.

**Charles C. Stedman**, vice-president, works manager and chief engineer, The Central Tractor Company, Greenwich, Ohio.

#### Transfer of Grade

**J. I. Mutchler**, instructor, department of agricultural engineering, University of Saskatchewan, Saskatoon, Saskatchewan, Canada. (Student to Junior Member)

### Applicants for Membership

The following is a list of applicants for membership in the American Society of Agricultural Engineers received since the publication of the March issue of AGRICULTURAL ENGINEERING. Members of the Society are urged to send information relative to applicants for consideration of the Council prior to election.

**J. I. Banash**, consulting engineer, International Acetylene Association, Chicago, Illinois.

**L. L. Cass**, engineering manager, tractor and implement division, Hyatt Roller Bearing Company, Des Plaines, Illinois.

**Wharton Clay**, commissioner, Associated Metal Lath Manufacturers Association, Chicago, Illinois.

**Arthur M. Cobleigh**, field representative and salesman, Loudon Machinery Company, Manchester, New Hampshire.

**Arthur P. Eberlin**, manager of statistical department, The National Trade Extension Bureau, Evansville, Indiana.

**Eloise Davison**, assistant professor, household administration, Iowa State College, Ames, Iowa.

**Martin R. Huberty**, junior irrigation engineer, University

of California, Davis, California.

**Howard C. Lisle**, manager, Bean Spray Pump Company, Lansing, Michigan.

**T. A. Wood**, field engineer, California Committee on Relation of Electricity to Agriculture, University Farm, Davis, California.

#### Transfer of Grade

**Lee H. Ford**, state tractor school instructor, Greenfield, Illinois.

**Robert A. Norton**, junior drainage engineer, Bureau of Public Roads, U. S. Department of Agriculture, Champaign, Illinois.

## Employment Bulletin

This service, conducted by the American Society of Agricultural Engineers, appears regularly in each issue of Agricultural Engineering. Members of the Society in good standing will be listed in the published notices of the "Men Available" section. Non-members as well as members, are privileged to use the "Positions Available" section. Copy for notices should be in the Secretary's hands by the 20th of the month preceding date of issue. The form of notice should be such that the initial words indicate the classification. No charge will be made for this service.

### Men Available

**AGRICULTURAL ENGINEER**, married, age 29, 1922 graduate of Iowa State College in agricultural engineering, now assistant engineer in construction department of International Railways of Central America, desires position where permanent residence is possible, preferably experimental or production work, or management of reclamation project or large ranch. Ten years experience in general farming with power equipment, experimental and teaching work, and construction work. Can speak Spanish, also some French and German. MA-130.

**AGRICULTURAL ENGINEER**, graduate of Cornell University with advanced degree in agricultural engineering, desires position designing and developing farm machinery and equipment, or doing agricultural engineering research. Experienced in the design of several types of machines and of wooden and reinforced concrete structures. Has demonstrated exceptional inventive ability. Several years instructor and assistant professor in agricultural schools and colleges. MA-131

**WORKS MANAGER** available. Seventeen years experience in the designing and manufacture of tractors, harvesting machines, and earth-working tools. Sales experience in United States, Canada, England, France, and Italy. Write for interview. MA-132.

### Positions Open

**SALES ENGINEERS WANTED:** One of the largest bearing manufacturers in America can use the services of two good sales engineers. Men with an engineering education and sales experience in farm tractor and implement field are preferred. They should have designing ability so that they can be of service to customers. Those experienced in the farm-implement and tractor design will be shown preference. Write fully giving all data as to experience, education and salary expected.

**YOUNG MAN**, preferably with agricultural college training, wanted to do research and publicity work. He must be familiar with agricultural problems, use of modern farm equipment, and have some ability to write articles. PO-113.

**YOUNG MAN** qualified to act as secretary or assistant to sales manager is wanted by a large farm-equipment concern in Illinois. PO-115.

**FACTORY SUPERINTENDENT** with foundry experience wanted by farmer-equipment manufacturer in Ohio. PO-114.

#### CIVIL SERVICE OPENINGS

The U. S. Civil Service Commission announces open competitive examinations for associate mechanical engineer, assistant drainage engineer, and assistant irrigation engineer, to fill vacancies in the Bureau of Public Roads, U. S. Department of Agriculture. The duties of the associated mechanical engineer are the development of cotton-drying machinery and the design of farm implements and machines. The duties of assistant drainage engineer and assistant irrigation engineer will be to make surveys and prepare plans and reports upon projects involving the drainage and irrigation of agricultural lands, to collect technical data, and to conduct original investigations in the field of agricultural drainage and irrigation. Applicants should apply for Form 2118, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or other branch offices of the Commission. Receipt of applications will close April 27, 1926.